WESTEPN FARMER & GARDENER.

"THE PROFIT OF THE EARTH IS FOR ALL; THE KING HIMSELF IS SERVED BY THE FIELD."—*Eccles* 5–9.

VOL. III. INDIANAPOLIS, SEPTEMBER, 1847. NO. 8.

TERMS: FIFTY CENTS A YEAR IN ADVANCE.

WESTERN FARMER & GARDENER.

JOHN D. DEFREES, *Printer and Publisher.*

Indianapolis, September, 1847.

☞ Mr. BEECHER, has not been able to bestow any attention on this paper the past three months, as its readers are aware from its contents. He has now removed to Brooklyn, New York, and will be its editor no longer. The present volume will be completed, and then the paper will be discontinued, unless, in the mean time, the services of a competent editor can be procured, and a patronage received to make it an object to keep it up. Heretofore, it has only paid expenses; a fact not at all creditable to the farmers of the State.

We hope those who have been in the habit of contributing to its columns, will continue their favors until the end of the volume. PUBLISHER.

COMMUNICATIONS.

INOCULATION OF FRUIT TREES.

LAFAYETTE, Sept. 8th, 1847.

Looking over the August number of the Farmer and Gardener, I see a piece signed J. H. Robinson, in which he says he feels confident that no one can be successful in budding by leaving a slice of wood or not taking (in substance) the wood out, and that reason must have been absent when Mr. Downing was theorizing on the subject of budding.

I have been engaged in the nursery business for five or six years. I practiced taking out the wood with as much success as Mr. R., for two or three years; but being scarce of buds of some varieties; on some scions the buds were raised so that it was difficult to take out; such I tried by leaving it in, and with better success; from which taking the hint, I have done all so since. Yesterday I counted ten hundred and ninety-five, of which I only lost ten. These were put in four or five weeks ago, and one half of them were budded by a boy who had never budded any until the week before. As regards the best time, I prefer August, when the wood is perfectly ripe. If the bark be tight on the scion from which you take the bud, no difference. In the early part of the season, I prefer the past year's buds, or even the spurs if half an inch long. (I budded in August from scions cut last winter, with success,) taking them from the tree when wanted, they will also bear more exposure by carrying a distance. I have used them when to appearance, as dry as if they had lain in the sun in warm weather a week, with success. I have this season budded near twenty thousand trees.

I strongly advise occasional budders to leave in the wood. I take out no wood, but frequently put in buds without wood, when the buds are not raised on the scion.

What I have written is my expertence, and probably might be of use to some of the readers of the Farmer and Gardener. LENOX.

BEECH TREE---IS IT EVER STRUCK BY LIGHTNING.

In the Review of the Trees and Shrubs of Massachusetts I quoted Emerson (see p. 39, vol. 3, of the Farmer and Gardener) as follows:

"The beech is said never to be struck by lightning. In travelling through a forest country, many oaks may be found which have been so struck, but never a beech." At the time of making this quotation, I was conscious of having somewhere met with testimony of an opposite character; but not being able at the time to cite my author, I allowed the quotation to pass without comment. Recently, however, among the multitude of ideas which arise in a man's mind, there appeared a train which led me directly to the point in question.

Desirous that the truth should be elicited, I will endeavor to embody what is important in the communications of the writers; hoping that the readers of the Farmer and Gardener will forward the investigation by such means as they can easily command. I, for one, am prepared to say, that I have never seen a beech tree affected by lightning. Has any one ever seen a *buckeye* thus affected? Other forest trees might be named, which appear to escape as well. It would be interesting and perhaps profitable to make out a catalogue of such trees as we *know* to have been struck by lightning; for if there is any immunity from the electrical bolt, possessed by any of our trees, it should be known; and if there is none, it should be known. And more especially should we be careful not to represent that as a protector against lightning, which, confiding in, on the authority of another, may prove to be our destruction. And let it be further noted, that because a tree may be proved to be a conductor of electricity to such a degree as to prevent its being shivered by it, it does not follow that a human being or any animal would be safe beneath its branches, during the passage of the electricity! If the human body should prove to be a *better* conductor than the tree, as is probably the case with regard to any tree, the electricity would leave the tree and pass into the individual.

I will here *begin* such a catalogue as I have alluded to; and those who can add, now or hereafter, to the number of kinds of trees evidently struck, will confer a favor, I think, upon many, by naming them to the editor of this paper: Some species of Oak, the Black Walnut, Tulip Tree, Ash, Hickory, Elms. These are all that occur to mind now as having been seen marked by lightning. It will be an easy matter for any one passing through a wood, to notice the *kind* of tree he may discover to have suffered from lightning; and if not found in the above list, he can as easily communicate the fact to the Farmer and Gardener.

But let us proceed to the extracts: For more than a hundred years, it has been observed that the beech tree has always escaped the effects of atmospheric electricity. Neither tradition, nor more authentic history, says a medical writer, give any account of injury having been sustained by a beech tree from electricity. So notorious is that fact, that it is considered almost impossible to be struck by lightning, if protection be sought under a beech tree. The late Dr. L. H. Mitchell of New York City, also entertained this belief.

But on the other hand, we have apparent exceptions given by several writers. Thus Prof. Loomis of Ohio says of a beech struck by lightning: "The tree was perhaps seventy feet high, of good size, the lower half being fresh and vigorous, the upper half entirely dead and dry. The top limbs were shivered into a large number of fragments, and scattered in all directions. The marks of the lightning are very

evident until it came to the green limbs, after which no traces of it could be perceived. The green trunk is supposed to be so good a conductor as to have conveyed off the electricity without resistance." Another writer gives three other instances: In the first, the electric fluid struck the highest branch of a tall whitewood tree, [Liriodendron tulipifera or tulip tree, I suppose. J. T. P. and myself,] after descending about twenty feet, divided, and one portion of it passed down the branch of a beech tree, the distance of ten feet, and a few feet down the trunk, when it returned to the whitewood tree ten feht from the ground. Both were dead trees. In the second case, the electric fluid passed down one of the large branches, then entering the heart or pith, descended into the ground beneath the centre, splitting the tree from the top to the roots. In the third case, the lightning descended a beech tree and killed two hogs which were lying near its roots. All the trees were in the same neighborhood. Beside these cases, it is also stated in the papers, that four young men were killed by lightning, in Kentucky, after taking shelter under a beech tree, which, according to a popular error, says the writer, is supposed to be a non-conductor of electricity.

Very few persons, after reading of these instances would venture their lives under a beech, more than they would under any other tree. To escape the electric stroke, our scientific men advise us to betake ourself to the open field, during the discharges of electricity. J. T. P.

SHEEP VERSUS BRIARS.

MONTGOMERY, O., August 27, 1848.

From your article on "Apologies" on the first page of the third number of the current volume, I infer that you consider me under obligations to *make an apology*. I will therefore in a few words try to make the best I can. I can derive far more benefit from the articles of your correspondents and from your editorials than from any thing I can write; and if your paper is more interesting and profitable to me without any labor on my part, why should it not be so to others? Having but little experience as a farmer, a well written communication upon any branch of agriculture is always interesting and often profitable to me, and I would not willingly deprive your readers of any benefit they might derive from the productions of your numerous and intelligent correspondents or from your own essays, in arder to intrude upon them any of my own. And yet when any one asks for information through your columns and I am in possession of it, I am not sure that I am justifiable in withholding it, after waiting a reasonable length of time to give others an opportunity.

My friend J. W. Gilbert, vol. 2, page 357, makes the inquiry, "*What time in the year is the best for cutting briars?*" The history of a field of nine akers which had for many years been greatly infested with the tall bramble, the low running variety and an intermediate kind will furnish the best answer to this question I am able to give. Various means were used for their eradication, amongst which were cutting while in bloom, cutting in August, plowing in autumn, &c. Some were cut in the *light* and some in the *dark* of the moon without any perceptible difference in the result. In the fall of 1844, it was seeded down with wheat and timothy. After the crop was removed it was used as a pasture for cattle and the briers grew most luxuriantly.—They were cut close to the ground in February, 1846, and a part of them again in June and the remainder in August succeeding. This plan was highly recommended in a letter published in the *Western Farmer* in 1841, by a very intelligent and enterprising farmer in Kentucky. It may sometimes succeed, but in this case the briers seemed, if at all affected by it, to be spread more rapidly than before. In September a flock of sheep sufficient in number to keep the pasture short, was turned in, and in a few weeks the young briers were entirely stripped of their leaves.

The sheep for the preservation of health, are frequently changed from one pasture to another, but always returned to the briers when young shoots begun to appear. This course has now been pursued for nearly a year, and most of the briers are entirely dead, and the few that yet exhibit symptoms of life have not been permitted to throw up any new shoots this year. Now I would say to those who do not wish to raise their own blackberries or to supply their neighbors with that excellent fruit, let your fields be seeded down with such grass as you prefer for pasture, then let all the tall briers at least be cut and raked into heaps during the winter or early spring, and as soon as the young shoots begin to appear, turn in your sheep in sufficient number to eat all the leaves, and if after pursuing this course for two years, any briers are left, I am willing to bear the responsibility of having erred in my judgment upon this question. A farmer told me on yesterday, "that he would not keep a flock of sheep if they were not so useful in destroying weeds and briers." When he took possession of his farm it was overrun with briers, but as he had been told that they were easily killed by cutting them in the dark of the moon in August, he did not think that much of a disadvantage; but after trying it for several years, he found himself about where he began. He then procured a flock of sheep, and what he could not do with the scythe *aided by the moon*, was soon effected by his sheep. Another farmer in this county, who thinks the *philosophy* of farming is contained in two words (hard work) cuts his briars close to the ground as often as they grow high enough to admit of it — his plan succeeds very well.

Respectfully yours,

J. S. GALLOWAY.

P. S. Question 1. When and how should orchard grass be sown to succeed well?

2. What quantity of seed is necessary for wood-lands, and at what time should it be sown?

WHITE CLOVER FOR PASTURES, &c.

FRANKLIN COUNTY, Ia., Aug. 18th, 1847.

Friend Beecher:—The season of the year has again made its appearance, which reminds me forcibly, of your editorial remarks, in answer to a sentence contained in a communication written by me and published in the seventeenth number, volume two, of your paper, on the subject of WHITE CLOVER.

You there say, "Our correspondent's objections arise, we presume, from the disposition of white clover (called also Dutch clover *trifolium repens*) to spread, and from its almost invincible tenacity of life. On these accounts it is vexatious in a garden and in cultivated fields. But Mr. Brady will, upon reperusing, perceive that we were advising J. F. K. in respect to the formation of *a pasture sward*."

I here take occasion to state, that I understood your remarks, correctly, at the time; and it was owing to your recommending the white clover sown for a *pasture sward*, that elicited from me, one short sentence upon the subject. I have lived upon a *farm* all my lifetime, and have closely observed (for many years,) the deleterious effects produced, upon horses, cattle, and even hogs, by feeding upon pasture but partially, interspersed, with WHITE CLOVER. I allude, particularly, to the propensity it always has, to cause *stock* to *slobber*, from about the first of July, until fall. Stock, of all kinds, seek after white clover wherever it may be found, and should there be but a small portion of it in each field, yet the eagerness with which that portion is devoured, especially by horses, causes a second growth to spring up early, and from that time till fall, it will always be found to have a very deleterious effect upon most kinds of stock raised by the farmer. It is truly tenacious of life and somewhat vexatious, in gardens and cultivated fields; but I can cheerfully withstand any inconvenience arising from such sources, if I could only keep it from my meadows and pastures. You may rest assured, however, and it will be plainly demonstrated to every farmer who tries the experiment, that if it is once introduced upon a farm, it will be impossible to ever eradicate it from said farm again.

My own experience has plainly proven to me, that two or three crops of corn may be raised, in a field, which was but partially set, in white clover, and then, every pains taken in preparing and sowing the same field in *timothy*, yet by the time two years roll around, the *white clover* will be about as thick on the ground again as it was previous to breaking it up for corn.

I am clearly of the opinion, that it is calculated to enrich our farms, but when I compare its value in that respect

with the perplexing and pernicious effects produced upon stock; together with the prospect of an endless continuance of such perplexities and vexations, I am irresistibly led to the conclusion to cultivate it in no form or shape, further than compelled to by *painful* necessity.

Permit me here to state, that I have both tested, and witnessed, the peculiar advantages derived from the culture of *red clover*. Notwithstanding I am aware that it has some objectionable features in common with white clover, yet as a FERTILIZER, I consider it preferable to most other grasses, and in point of profit, perhaps none exceed it. It has often been a matter of surprise and astonishment, to me, that so many farmers, (who in every other respect appear to have an eye to the improvement of their farms,) should neglect to cultivate *red clover*. It is decidedly my opinion, that no grass known in the western country, is better calculated to enrich and improve our farms than it is, and I think none is more easily cultivated. I have sowed more or less of it every spring, for the last ten or eleven years, and with but a slight exception, have always been successful. I am aware that many persons raise objections against red clover, because of the fatal effect produced by it upon their cattle, when first turned on it in the spring. I am willing to admit, that it is somewhat objectionable in that respect, yet, at the same time, I think a little precaution on the part of the farmer, will measurably prevent those difficulties.

I have generally turned from five to twenty-five head of cattle on my clover each spring, and have never lost one from the effects of it yet. My uniform course has been to allow my stock plenty to eat, in the morning before I turn them on my clover, and always wait till the dew is fully off. I have also permitted them to have free access to hay, or straw, for a few of the first days after turning in. Care should be taken to not allow cattle to remain on pasture after a rain, until they get a little used to it. I had intended to advert to one more subject, but time, and room, forbid at the present. I shall therefore content myself, by waiting till I see whether you consider this worthy of a place in your columns or not.

JOHN P. BRADY.

"EASY METHODS" IN SOAP MAKING.

In the first volume of the Farmer and Gardener, we have an essay on soap making; in a review of that article, p. 93, of 2d volume, 55 of 3d volume, further information is called for in half a dozen queries, expressed or implied; and on p. 65 of the same volume, answers were given. But on p. 99 following, another correspondent wishes some one to crack the "nut shell" where "lies the whole secret" of soap making. He is desirous of knowing some easy method of determining the causticity or strength of lye; and also an easy remedy for carbonated lye.

There are two easy means of testing the strength of lye. One is, by the aid of that little instrument in the possession of every one,—the tongue. By this we determine the quality of teas, sirups and all objects of taste. The impression made upon the tongue by the fraction of a drop of lye will soon enable the housewife, after a little experience, to test the causticity of the leachings; and if the impression should at any time be disagreeable, a little vinegar applied to the part, will immediately correct it. Those who hesitate to use this method map adopt the following: take a given measure of lye with which you have made soap, say a tablespoonful or a tumberful, and add vinegar or any common acid to it, till it ceases to effervesce or foam. Note the quantity of vinegar required for this purpose. Ever afterward if you have lye which requires *no more* vinegar than the quantity noted, to expel the carbonic acid from the lye, (for the escape of this acid causes the effervescence) you may be assured the lye is not in fault.

But if the lye should require *more* vinegar than the quantity noted, to expel the carbonic acid, the lye is probably too much *carbonated;* and for this fault, the "easy remedy" is caustic lime. This may be added to the lye, by stirring in, say a quart or two to ten or fifteen gallons of the lye and boiling it a few minutes.

It is obvious that the vinegar or other acid kept for the purpose, should be always of the same strength, to make this method successful.

J. T. P.

SELECTIONS.

ADDRESS OF THE LATE GOVERNOR WRIGHT,

READ AT THE AGRICULTURAL STATE FAIR AT SARATOGA SPRINGS.

From the Cultivator.

Mr. President and Gentlemen of the State Agricultural Society:

Had it been my purpose to entertain you with a eulogium upon the great interest confided to your care—the agriculture of the State—I should find myself forestalled by the exhibition which surrounds us, and which has pronounced that eulogy to the eye much more forcibly, impressively, eloquently, than I could command language to pronounce it to the ear of this assembly.

Had I mistakenly proposed to address to you a discourse upon agricultural production, this exhibition would have driven me from my purpose, by the conviction that I am a backward and scarcely initiated scholar, standing in the presence of masters, with the least instructed and experienced of whom it would be my duty to change places.

The agriculture of our State, far as it yet is from maturity and perfection, has already become an art, a science, a profession, in which he who would instruct must be first himself instructed far beyond the advancement of him who now addresses you.

The pervading character of this great and vital interest, however; its intimate connection with the wants, comforts and interests of every man in every employment and calling in life; and its controlling relations to the commerce, manufactures, substantial independence, and general health and prosperity of our whole people, present abundant subjects for contemplation upon occasions like this, without attempting to explore the depths or to define the principles of a science so profound, and, to the uninitiated, so difficult as is that of agriculture.

Agricultural production is the substratum of the whole superstructure; the great element which spreads the sail and impels the car of commerce, and moves the hands and turns the machinery of manufacture. The earth is the common mother of all, in whatever employment engaged, and the fruits gathered from its bosom are alike the indispensable nutriment and support of all. The productions of its surface and the treasures of its mines are the material upon which the labor of the agriculturist, the merchant, and the manufacturer, are alike bestowed, and are the prize for which all alike toil.

The active stimulus which urges all forward, excites industry, awakens injenuity, and brings out invention, is the prospect or the hope of a market for the productions of their labor. The farmer produces to sell; the merchant purchases to sell; and the manufacturer fabricates to sell. Self-consumption of their respective goods, although an indispensable necessity of life, is a mere incident in the mind impelled to acquisition. To gain that which is not produced or acquired, by the sale of that which is possessed, is the great struggle of laboring man.

Agricultural production is the first in order, the strongest in necessity, and the highest in usefulness, in this whole system of acquisition. The other branches stand upon it, are sustained by it, and without it could not exist. Still it has been, almost uniformly, as the whole history of our State and country will show, the most neglected. Apprenticeship, education, a specific course of systematic construction, have been, time out of mind, considered indispensible pre-requisites to a creditable or successful engagement in commercial or mechanical pursuits; while to know how to wield the axe, to hold the plow, and to swing the sythe, has been deemed sufficient to entitle the possssor of that knowledge to the first place and the highest wages in agricultural employment.

A simple principle of production and of trade, always practically applied to manufactures and commerce, that the best and cheapest article will command the market, and prove the most profitable to the producer and the seller, be-

cause most beneficial to the buyer and consumer, is but beginning to receive its application to agriculture. The merchant who, from a more extensive acquaintance with his occupation, a more attentive observation of the markets, better adapted means, and a more careful application of sound judgment, untiring energy and prudent industry, can buy the best and sell the cheapest, has always been seen to be the earliest and surest to accomplish the great object of his class, an independence for himself. So the mechanic who, from a more thorough instruction in the principles and handicraft of his trade, or a more intense application of mind and judgment with labor, can improve the articles he fabricates, or the machinery and modes of their manufacture, and can thus produce the best and sell the cheapest, has always been seen to reach the same advantage over his competitors, with equal readiness and certainty; and that these results should follow these means and efforts, has been considered natural and unavoidable.

Still the agriculturist has been content to follow in the beaten track, to pursue the course his fathers have ever pursued, and to depend on the earth, the seasons, good fortune, and Providence, for a crop, indulging the hope that high prices may compensate for diminished quantity or inferior quality. It has scarcely occurred to him that the study of the principles of his profession had anything to do with his success as a farmer, or that what he had demanded from his soils should be considered in connection with what he is to do for them, and what he is about to ask them to perform. He has almost overlooked the vital fact that his lands, like his patient teams, require to be fed to enable them to perform well, and especially has he neglected to consider that there is a like connection between the quantity and quality of the food they are to receive, and the service to be required from them. Ready, almost always, to the extent of their ability, to make advances for the purchase of more lands, how few of our farmers, in the comparison, are willing to make the necessary outlays for the profitable improvement of the land they have!

These, and kindred subjects, are beginning to occupy the minds of our farmers, and the debt they owe to this Society for its efforts to awaken its attention to these important facts, and to supply useful and practical information in regard to them, is gradually receiving a just appreciation, as the assemblage which surrounds, and the exhibitions upon this ground, most gratifyingly prove.

Many of our agriculturists are now vigorously commencing the study of their soils, the adaptation of their manures to the soil and the crop, the natures of the plants they cultivate, the food they require, and the best methods of administering that food to produce health and vigor and fruit; and they are becoming convinced that to understand how to plow and sow and reap is not the whole education of a farmer; but that it is quite as important to know what land is prepared for the plow, and what seed it will bring to a harvest worthy of the labors of the sickle. Experience is steadily proving that, by a due attention to these considerations, a better article, doubled in quantity, may be produced from the same aker of ground, with a small proportionate increase of labor and expense, and that the farmer who pursues this improved system of agriculture, can, like the merchant and mechanic referred to, enter the market with a better production, at a cheaper price, than his less enterprising competitor.

This change in the agriculture of our State and country opens to the mind reflections of the most cheering character. If carried out to its legitimate results, it promises a competition among our farmers, not to obtain the highest prices for inferior productions, but to produce the most, the best, and the cheapest of the necessaries of human life. It promises agricultural prosperity, with cheap and good bread, furnished in abundance to all who will eat within the rule prescribed by fallen man, in the sacred volume of the Divine law.

Steady resolution and persevering energy are requisite to carry forward these improvements to that degree of perfection dictated alike by interest and by duty; and the stimulus of a steady and remunerating market will rouse that resolution and nerve that energy. Without this encouragement in prospect, few will persevere in making improvements which require close and constant mental application as well as severe physical labor. Agriculture will never be healthfully or profitably prosecuted by him whose controlling object is his own consumption. The hope of gain is the motive power to human industry, and is as necessary to the farmer as to merchant or manufacturer. All who labor are equally stimulated by the prospect of a market which is to remunerate them for their toil, and without this hope neither mental activity nor physical energy will characterise their exertions. True it is that the farmers of our country, as a class, calculate less closely the profits of their labor and capital, than men engaged in most other pursuits, and are content with lower rates of gain. The most of them own their farms, their stocks and farming implements, unincumbered by debt. Their business gives but an annual returned. They live frugally, labor patiently and faithfully, and at the close of the year its expenses are paid from its proceeds, the balance remaining being accounted the profits of the year. Although a moderate sum, it produces contentment, without a computation of the rate per cent. upon the capital invested, or the wages it will pay to the proprietor and the members of his family. The result is an advance in the great object of human labor, and, if not rapid, it is safe and certain. It is a surplus beyond the expense of living, to be added to the estate, and may be repeated in each revolving year.

If, however, this surplus is left upon the hands of the farmer, in his own products, for which there is no market, his energies are paralyzed, his spirits sink, and he scarcely feels that the year has added to his gains. He sees little encouragement in toiling on, to cultivate beyond his wants productions which will not sell; and the chances are that his farm is neglected, his husbandry becomes bad, and his gains in fact cease.

To continue a progressive state of improvement in agriculture, then, and to give energy and prosperity to this great and vital branch of human industry, a healthful and stable market becomes indispensible, and no object should more attentively occupy the attention of the farmers of the United States.

Deeply impressed with the conviction of this truth, benevolent minds have cherished the idea that a domestic market, to be influenced only by our own national policy, would be so far preferable, in stability and certainty, to the open market of the commercial world, as to have persuaded themselves that a sufficient market for our agricultural products is thus attainable. It is not designed to discuss the soundness of this theory where it can be reduced to practice; but only to enquire whether the state of this country, the condition of its society, and the tendency and inclination of its population, as to their industrial pursuits, are such, at the present time, or can be expected to be such for generations yet to come, as to render it possible to consume within the country the surplus productions of our agriculture. The theory of an exclusively domestic market for this great domestic interest is certainly a very beautiful one, as a theory, and can scarcely fail to strike the mind favorably upon a first impression. Still, examination has produced differences of opinion between statesmen of equal intellegence and patriotism, as to its influence upon the happiness and prosperity of a country and its population. An examination of this question would lead to a discussion properly considered political, if not partisan, and all such discussions it is my purpose to avoid, as inappropriate to the place and the occasion.

I simply propose to inquire as to a fact which must control the application of theories and principles of political economy touching this point, to our country and its agricultural population, without raising any question as to the wisdom of the one or the soundness of the other. Is the consumption of this country equal to its agricultural production, or can it become so within any calculable period of years? How is the fact? May I not inquire without giving offence, or transcending the limits I have prescribed for myself in the discussion? Can a fair examination, scrupulously confined to this point, take a political bearing or disturb a political feeling! It is certainly not my design to wound the feelings of any member of the Society, or of any citizen of the country; and I have convinced myself that I

may make this inquiry, and express the conclusion of my own mind as to the result, without doing either. If I shall prove to be in error, it will be an error as to the fact inquired after, and not as to the soundness of the principle in political economy dependent upon the fact for its application, because as to the soundness of the principle, I attempt no discussion and offer no opinion. It will be an error as to the applicability of a theory to our country, and not as to the wisdom or policy of the theory itself, because of the soundness or unsoundness of the theory, when it can be practically applied, I studiously refrain from any expression, as inappropriate here. With the indulgence of the Society, I will inquire as to the fact.

Our country is very wide and very new. It embraces every variety of climate and soil most favorable to agricultural pursuits. It produces already almost every agricultural staple, and the most important are the ordinary productions of extensive sections of the country, and are now sent to the markets in great abundance.

Yet our agriculture is in its infancy almost everywhere, and at its maturity nowhere. It is believed to be entirely safe to assume that there is not one single agricultural county in the whole Union, filled up in an agricultural sense—not one such county which has not yet land to be brought into cultivation, and much more land the cultivation of which is to be materially improved, before it can be considered as having reached the measure of its capacity for production. If this be true of the best cultivated agricultural county in the Union, how vast is the proportion of those counties which have entire townships, and the States, which have not merely counties, but entire districts, yet wholly unpeopled, and unreclaimed from the wilderness state?

When to this broad area of the agricultural field of our country, we add our immense territories, organized and unorganized, who can compute the agricultural capacities of the United States, or fix a limit to the period when our surplus agricultural productions will increase with increasing years and population. Compare the Censuses of 1830 and 1840 with the map of the Union, and witness the increase of population in the new States, which are almost exclusively agricultural, and who can doubt the strong and resistless inclination of our people to this pursuit?

Connect with these codsiderations of extent of country, diversity of soils, varieties of climate, and partial and imperfect cultivation, the present agricultural prospects of this country. Witness the rapid advances of the last dozen years in the character of our cultivation, the quality and quantity of our productions from a given breadth of land, and the improvements in all the implements by which the labor of the farmer is assisted and applied. Mark the vast change in the currrent of educated mind of the country, in respect to this pursuit: the awakened attention to its high respectability as a profession, to its safety from hazards, to its healthfulness to mind and body, and to its productiveness. Listen to the call for information, for education, upon agricultural subjects, and to the demands that this education shall constitute a department in the great and all-pervading system of our common school education, a subject at this moment receiving the especial attention, and being pressed forward by the renewed energies of this Society. Behold the numbers of professors, honored with the highest testimonials of learning conferred in our country, devoting their lives to geological and chemical researches calculated to evolve the laws of nature connected with agricultural production. Go into our colleges and institutions of learning, and count the young men toiling industriously for their diplomas, to qualify themselves to become practical and successful farmers, already convinced that equally with the clerical, the legal, and the medical professions, that of agriculture requires a thorough and systematic education, and its successful practice the exercise of an active mind devoted to diligent study.

Apply these bright and brightening prospects to the almost boundless agricultural field of our country, with its varied and salubrious climate, its fresh and unbroken soils, its cheap lands and fee-simple titles, and who can hope, if he would, to turn the inclinations of our people from this fair field of labor and of pleasure? Here the toil which secures a certain independence is sweetened by the constant and constantly varying exhibitions of nature in her most lovely forms, and cheered by the most benignant manifestations of the wonderful power and goodness of Nature's God. Cultivated by the resolute hands and enlightened minds of freemen, owners of the soil, properly educated, as farmers, under a wise and just administration of a system of liberal public instruction, should and will be, and aided by the researches of Geology and Chemistry, who can calculate the extent of the harvests to be gathered by this vast field of wisely directed human industry?

The present surplus of breadstuffs of this country could not have been presented in a more distinct and interesting aspect than during the present year. A famine in Europe, as wide-spread as it has been devastating and terrible, has made its demand upon American supplies, not simply to the extent of the ability of the suffering to purchase food, but in superadded appeals to American sympathy in favor of the destitute and starving. Every call upon our markets has been fully met, and the heart of Europe has been filled with warm and grateful responses to the benevolence of our countrymen, and yet the revenues of commerce are filled with the productions of American agriculture. Surely the consumption of this country is not now equal to its agricultural productions.

If such is our surplus in the present limited extent and imperfect condition of our agriculture, can we hope that an exclusive domestic market is possible, to furnish a demand for its mature abundance? In this view of this great and growing interest, can we see a limit to the period when the United States will present, in the commercial markets of the world, large surplusses of all the varieties of breadstuffs, of beef, pork, butter, cheese, cotton, tobacco, and rice, beyond the consumption of our own country? And who, with the experience of the last few years before him, can doubt that the time is now at hand when the two great staples of Wool and Hemp will be added to the list of our exportations?

These considerations, and others of a kindred character, which time will not permit me to detail, seem to me, with unfeigned deference, to prove that the agriculture of the United States, for an indefinite period yet to come, must continue to yield annual supplies of our principal staples, far beyond any possible demand of the domestic market, and must therefore remain, as it now is and has ever been, an exporting interest. As such it must have a direct concern in the foreign trade and commerce of the country, and in all these regulations of our own and of foreign governments which affect either, equal to interest in a stable and adequate market.

If this conclusion be sound, then our farmers must surrender the idea of a domestic market to furnish the demand, and measure the value of their productions, and must prepare themselves to meet the competition of the commercial world in the markets of the commercial world, in the sale of the fruits of their labor. The marts of commerce must be their market, and the demand and supply which meet in those marts govern their prices. The demand for home consumption, as an element in that market, must directly and deeply interest them, and should be carefully cultivated and encouraged, while all the other elements acting with it, and constituting together the demand of the market, should be studied with equal care, and, so far as may be in their power, and consistent with other and paramount duties, should be cherished with equal care.

Does any one believe, that for generations yet to come, the agricultural operation of the United States are to be circumscribed within narrower comparative limits than the present; or that the agricultural productions of the country are to bear a less ratio to our population and consumption than they do now? I cannot suppose that any citizen, who has given his attention to the considerations which have been suggested, finds himself able to adopt either of these opinions. On the contrary, I think a fair examination must satisfy every mind that our agricultural surplus, for an indefinite future period, must increase much more rapidly than our population and the demand for domestic consumption. This I believe would be true without efforts of associations, such as this, to improve our agriculture. The condition of the country, and the inclination and preference of our population for agricultural pursuits, would render this result unavoidable: and if this be so, whe the impetus given

to agricultural production by the improvements of the day; the individual and associated efforts constantly making to push forward these improvements with an accelerated movement; the mass of educated mind turned to scientific researches in aid of agricultural labor; the dawning of a systematic and universal agricultural education; and the immense bodies of cheap and fresh and fertile lands, which invite the application of an improved agriculture, are added to the account, who can measure the extent or duration of our agricultural surplus, or doubt the soundness of the conclusion that the export trade must exercise a great influence upon the market for the agricultural productions of the country, for a long series of years to come.

Such is the conclusion to which my mind is forced, from an examination of this subject, in its domestic aspect simply; but there is another now presented of vast magnitude and engrossing interest, and demanding alike from the citizen and statesman of this Republic, the most careful consideration. All will at once understand me as referring to the changes and promises of change in the policy of the principal commercial nations of the world, touching their trade in the productions of agriculture. By a single step, which was nothing less than commercial revolution, Great Britain practically made the change as to her trade; and subsequent events have clothed with the appearance of almost superhuman sagacity, the wisdom which thus prepared that country to meet the visitation of famine, which has so often followed, without the additional evil of trampling down the systems of law to minister to the all-controlling necessities of hunger. Changes similar in character, and measurably equal in extent, though in many cases temporary in duration, have been adopted by several other European governments, under circumstances which render it very doubtful how soon, if ever, a return will be made to the former policy of a close trade in the necessaries of human life.

New markets of vast extent and incalculable value have thus been opened for our agricultural surplus, the durability and steadiness of which it is impossible yet to measure with certainty. It is in our power to say, however, that a great body of provocations to countervailing restrictive commercial regulations, is now removed, in some instances permanently, and in others temporarily in form; and it would seem to be the part of wisdom for the agriculture of this country, by furnishing these markets to the extent of the demand, with the best articles, at the fairest prices, to show to those countries and their respective governments that reciprocal commercial regulations, if they offer no other and higher attractions, present to their people a safeguard against starvation.

Such is the connection now between our agriculture and the export trade and foreign market, and these regulations are to be extended and strengthened, rather than circumscribed and weakened, by our agricultural advances. The consumption of the country is far short of its productions, and cannot become equal to it within any calculable period. On the contrary, the excess of production is to increase with the increase of population and settlement, and the improvements in agriculture and agricultural education. These appear to me to be facts, arising from the condition of our country, and the tastes and inclinations of our people, fixed beyond the power of change, and to which theories and principles of political economy must be conformed, to be made practically applicable to us.

The American Farmer, then, while carefully studying, as he should not fail to do, the necessities, the wants and the tastes of all classes of consumers of his productioes in his own country, must not limit his researches for a market within those narrow bounds. He must extend his observations along the avenues of commerce, as far as the commerce of his country extends, or can be extended, and instruct himself as to the necessities, and wants, and tastes of the consumers of agricultural productions in other countries. He must observe attentively the course of trade, and the causes calculated to exert a favorable or adverse influence upon it, watch closely the commercial policy of other countries, and guard vigilantly that of his own; accommodate his productions, as far as may be, to the probable demands upon the market, and understand how to prepare them for the particular market for which they are designed. Next to the production of the best article at the cheapest price, its presentation in market in the best order and most inviting condition, is important to secure to the farmer a ready and remunerating market.

So long as our agricultural shall continue to be an exporting interest, these considerations, as second only to the science of production itself, will demand the careful attention and study of our farmers, and in any well digested system of agricultural education, its connection with manufactures and the mechanic arts, with commerce, with the commercial policy of our own and other countries, and with the domestic and foreign markets, should hold a prominent place. A thorough and continued education in these collateral, but highly necessary branches of knowledge to the farmer, will prove extensively useful to the American citizen, beyond their application to the production and sale of the fruits of his labor. They will qualify him the more safely and intelligibly to discharge the duties of a freeman: and, if called by his fellow-citizens to do so, the more beneficially to serve his State and country in legislative and other public trusts.

I hope I may offer another opinion in this connection, without giving offence, or trespassing upon the proprieties of the place and occasion. It is that this education in the just and true connection between the agricultural, the commercial, and the manufacturing interests of our country, equally and impartially desseminated among the classes of citizens attached to each of these great branches of labor, would effectually put an end to the jealousies too frequently excited—demonstrating to every mind so educated, that, so far from either being in any degree the natural antagonist of the other, they are all parts of one great and naturally harmonious system of human industry, of which a fair encouragement to any part is a benefit to all; and that all invidious and partial encouragement to any part, at the expense of any other part, will prove to be an injury to all. The education proposed will do all that can be done to mark the true line between natural and healthful encouragement to either interest, and an undue attempt to advance any one, at the expense of the united system, merely producing an unnatural and artificial relation and action, which cannot fail to work disease and injury.

The labors of this Society, and of kindred associations, have done much to inform the minds of our farmers in these collateral branches of knowledge useful to them, and much remains to be done. The science of production claims the first place, and is a wide field, as yet so imperfectly cultivated as to afford little time for collateral labors. To secure a stable and healthful market, and to learn how to retain and improve it, also opens an extensive field for the mental energies of the farmer. Between these objects the relation is intimate and the dependence mutual. The production makes the market, and the market sustains the production. The prospect of a market stimulates to activity in the field of production, and the fruits of that activity urge the mind to make the prospect real. Success in both contributes to the health and vigor and prosperity of agriculture, and of that prosperity commerce and manufactures cannot fail largely to partake.

All are willing to promote the cause of agriculture in our State and country. Most are ready to lend an active cooperation, and all are careful to see accomplished any valuable improvement in this great branch of productive industry. The difficulty hitherto has been in adopting any general plan to effect this desirable object. Hence, most usually, when the public mind has been awakened to the subject, arbitrary, and in many cases, visionary experiments have been introduced based upon no philosophical investigation of cause and effect, but upon some accidental trial, by a single individual, of some novel mode of culture, which, under the circumstances attending the experiment, has met with success. This single experiment, without an inquiry into, or a knowledge of the cause which, in the given case, has secured the successful results, is at once recommended as an infallible rule of husbandry. The publication and dissemination of detached experiments of this character, for a long period, constituted the most material additions to the stock of literary information connected with agriculture, supplied to our farmers; while many of the experiments were too intricate and complicated to be reduced to prac-

tice with any certainty of accuracy, and others were so expensive that the most perfect success would not warrant the outlay. Unsuccessful attempts to follow the directions given for making these experiments, brought what came to be denominated "book farming" into great disrepute with the industrious, frugal and successful farmers of the country, and excited a jealousy of, and a prejudice against this description of information upon agricultural subjects, which it has cost years of patient and unceasing effort in any measure to allay, and which are not yet removed.

In the meantime geological research, heretofore principally confined to investigations into the mineral kingdom proper, has been extended to its legitimate office, and has brought within its examinations the formation of the various soils, and their minute constituent parts. Chemistry has commenced where Geology closed, and by a careful analysis of these constituents of the various soils, of the principal agricultural products, and of the usual manures, is laboring to establish upon philosophical principles the true relations between the soil and the manure to be applied, and between both and the crop to be planted and produced. It is seeking out, with rapid success, the appropriate food of the various vegetables cultivated by the farmer, the soils and manures in which the foot for each is found, and the way in which it may be most successfully administered. So with the food of the domestic animals, and the most economical manner of feeding it.

The investigations are the reverse of the former system of arbitrary experiments. There a result was made to justify the arbitrary means adopted to produce it. Here causes are ascertained, and, being so ascertained, are relied upon to produce their natural effect, which effect is the result sought.

The importance of this great subject is effectually arousing the attention of the literary and scientific men of the country, and the success already experienced is drawing to these researches minds qualified for the labor. The progress made is bringing together the unsettled mind of the country, and producing the very general impression that the time has arrived when the foundations of a systematic, practical agricultural education should be laid, and the superstructure commenced.

It is universally conceded that agriculture has shared but lightly in the fostering care and Government patronage which have been liberally extended to commerce and manufactures, nor is it believed that additional public expenditure is necessary to enable the State to do all that can reasonably be required of it to accomplish this great object. Our education funds are rich, and the colleges, academies and common schools of the State share liberally in the distributions from them, while a Normal School, for the education of teachers, instituted at the seat of Government, is also mainly supported by these funds. These institutions present the organization through which, perhaps, better than through any independent channel, this instruction can be universally disseminated among the agricultural population of the State. The annual additions to the school district libraries may be made with reference to this branch of education, and thus place within the reach of all the discoveries as they progress, and the rules of husbandry deduced from them, as they shall be settled and given to the public from the pens of the competent professors engaged in pursuing the researches.

The Society, and like associations may, through appropriate committees, their corresponding secretaries, public spirited commercial men, and otherwise, collect and embody in their transactions facts and information respecting the markets, foreign and domestic; the present and probable supply of agricultural products; the mode and manner of presenting the principal productions in the various markets in the most acceptible form; the state and prospects of trade at home and abroad, and the changes present and prospective in the commercial policy of our own and other countries, with the probable influence upon the agricultural market. The commercial and agricultural press will doubtless come powerfully to the aid of the associations, in all efforts of this character, and having these objects in view.

In this way the foundation may be gradually laid, and the materials collected for the commencement of those agricultuoal studies, which time and application, with the constant evidence of their utility in practice, would ripen into a system, to be engrafted upon the course of regular studies pursued in the colleges, academies and common schools, and made a branch of the studies of the male classes in the normal school, placed under the superintendence of an instructor selected for the purpose, and qualified to prepare his classes for teaching the studies in the common schools of the State.

Thus a generation of farmers would soon come forward, well educated in the great and essential principles of agricultural production; in the true relations existing between agriculture, commerce and manufactures, and in the adaptation and preparations of their products for the agricultural markets. Such farmers, with the continued aid of the schools in which they are taught, would become the best manual labor instructors for their successors.

The passage of time reminds me that I am extending these remarks beyond the proprieties of the occasion and the patience of my audience. A single reflection shall close them.

However confidently the opinion may be entertained that other circumstances and relations might present a prospect for the agriculture of our State and country more stable, independent and flattering, certain it is that the future here opened is full of cheering promise. We see in it the strongest possible security for our beloved country, through an indefinite period, against the scourge of famine. Our varied soil and climate and agriculture double this security, as the disease and failure of any one crop will not, as a necessary consequence, reduce any class of our population to an exposure to death from hunger. We see also, in addition to feeding ourselves, that our surplus is almost, if not altogether, sufficient, if faithfully and prudently applied, even now to drive famine from the length and breadth of Europe, and that it is in our power, by faithful mental and physical application, soon to make it equal to the expulsion of hunger from the commercial world.

We see that, dependent upon the commercial markets, our agriculture may bring upon our country a high degree of prosperity, and enable us, when extraordinary occasions shall call for its exercise, to practice a national benevolence as grateful to the hearts of the humane as to the wants of the destitute. And we see that by the wider diffusion and more secure establishment of a successful agriculture among our citizens, as a permanent employment, we are laying broader and deeper the foundation of our free institutions, the pride and glory of our country, and prized by its freemen as their richest earthly blessing; the history of all civil government confirmed by the experience of this Republic, furnishing demonstrative proof that a well educated, industrious, and independent yeomanry, are the safest repository of freedom and free institutions.

[We give room to the above address as embracing some topics worthy the consideration of our agricultural friends. It was written by Mr. Wright in obedience to a call of the Agricultural Society of New York. Before the time for their agricultural fair, the distinguished author died, but the address was read on the occasion by a gentleman selected for that purpose. The peculiar political notions it inculcates in regard to the controversy respecting a foreign and domestic market, we cannot endorse. We think the address assumes a position for the Whig party they never have occupied, if we understand their principles. They never took a stand in favor of an *exclusive* home market. The advantages of a home market over a foreign one is, that its demand far exceeds that of the latter, is easier of access, more to be depended on, and at the same time giving variety to labor and keeping its profits within our own country, for which reason the farmer has or ought to have as much interest in keeping up manufactures as those enjoyed by manufacturers themselves, because if they prosper he prospers. After we have supplied such a home market as this, if any overplus accrues, sell it or barter it off to foreigners, to the best advantage.]

PUBLISHER.

AGRICULTURAL SCHOOLS.

An advertisement in our columns of this day, draws our attention to this interesting and important subject. Schools of Agriculture and Model Farms have, for some years past, been very popular in Europe, and the very remarkable progress of husbandry in Great Britain, France and Germany, has been mainly due to those establishments.

In France, particularly, the results of these schools have been most striking. Baron Dupin, in his statistical account of France, for the year 1816, states that the average produce of wheat per aker was then fifteen bushels. The same distinguished political economist, in his report to the Chamber of Deputies, on the same subject, in the year 1841, asserts that the average of wheat had risen then to thirty-four bushels per aker; and he distinctly ascribes this prodigious increase in the product to the sixteen agricultural schools established in various parts of the country, under the auspices of government.

These facts lead us to consider how far similar institutions might be applicable to our own country. Two questions naturally suggest themselves to our mind, on this subject; first, are such schools needed in America; and secondly, would it be expedient for our farmers, considering the difference in the price of labor, to adopt European systems in agriculture and horticulture.

We apprehend that both questions may be answered, not by mere theoretical conjectures, but by incontrovertible facts.

1. The average produce of wheat in England is forty bushels per aker; that of the Mid Lothians and the Carse of Gowrie, in Scotland, is fifty-two bushels; that of the Western States of America, at the highest, is from sixteen to twenty: yet our country is blessed with most fertile lands and a heavenly climate; whereas the English and Scotch husbandmen have to struggle with an ungenial, variable temperature, and a soil comparatively barren; the difference in amount of production must therefore be attributed chiefly to the difference in the mode of cultivating.

We would not rashly condemn the methods followed in this country, but we would take warning from what has occurred in some of the Eastern States, Maryland and Virginia in particular, and avoid the ruinous consequences of exhausting the soil by unskillful and improvident management. In those States, many thousand akers, fenced in and provided with good houses, remain absolutely deserted, the proprietors finding it impossible to procure farmers sufficiently adventurous to undertake reclaiming such impoverished soil, on any terms. The lands of our western country, the bottom lands especially, are, we admit, much more fertile than those of the east; but no soil is inexhaustible; and obstinate routine and bad management, if persisted in, will inevitably produce in this favored portion of the Union, similar ruinous consequences.

Again it may be contended that we possess already scientific establishments and colleges, where the branches of knowledge applicable to husbandry are taught on the best principles. We do not question, nay, we acknowledge fully the value of such institutions, and the advantages accruing to the cultivator from a knowledge of chemistry, mechanics, hydrostatics, botany, anatomy and natural philosophy, but we take leave to doubt that such knowledge, alone, can make good practical farmers.

We are far, however, from regarding agriculture and horticulture, as mechanical professions, easy to be understood and acquired; nay, we contend that a thorough knowledge of all the arts of cultivation demands more intelligent observation and more diligent practice than any other profession: the modes of improving deficient soils; a judicious rotation of crops; a correct adaptation of crops to soils; the use of permanent amending additions to land; the properties of various plants, whether as regards their influence on the land that bears them, or on the animals which they are intended to feed; the nature and value of live-stock; the diseases to which they are liable; the various modes of buying and selling; the effects of fertilizers on different lands; such and many more, are the objects which intelligent and persevering practice has to conquer before the farmer can be called a master of his art.

We, therefore, do consider the first question as answered in the affirmative, viz: an early practical study of agriculture is as important to America as it is to Europe.

2. As regards the expediency of introducing European methods, taking into consideration the high price of labor in this country, we think that practices founded on scientific knowledge and adopted by experience, will be found, in any country, to be the most economical and the most profitable.

We do not mean to recommend that expensive outlay which the English, who work on their profits, may follow advantageously, but which prudence forbids our adopting at present. Thus, Scotch farmers have been known to go thirty and forty miles from their homesteads for lime or marl; and others pursuing systems of irrigation, to employ implements, or erect buildings, which required a large capital. In all such outlay our farmers and gardeners have nothing to imitate. But, if produce be doubled or tribled, if lands be placed in a state of permanent fertility, by adopting proper,—the drill, instead of the broad-cast system,—plowing instead of scratching the ground, the cultivation of green crops, and the soiling of cattle—and that such *must* be the result, can hardly be contested — will it not be admitted that our agriculture is deeply interested in the propagation of better methods than those generally followed?

These truths have not escaped the consideration of our shrewd fellow-citizens of the East. We observe an advertisement in the Saturday Courier of Philadelphia, announcing the opening of an agricultural school, at Mount Airy, Pa., on 1st September; and we rejoice to see that a similar establishment is about to be founded among us, and heartily recommend it to the patronage of all who desire to give to their sons a knowledge of the first and noblest source of national wealth.

Eighteen to twenty years ago, throughout the Western States, "book farming," as with a sneer it was called, was generally and loudly denounced. Gathering from their virgin soil fifty to sixty bushels of corn and twenty to twenty-five bushels of wheat per aker, and large crops of the less important grains as easily, our agriculturists were in the habit of regarding themselves and their systems of culture as perfect, and looked with indifference and often contempt on the knowledge of their art imparted by books and periodicals. Talk to them about agricultural chemistry, analyses of soils, the exhaustion of particular elements or properties, and half of them, without intended impoliteness, would laugh in your face, while the balance would with all courtesy and soberness tell you their soil produced more without such aids or knowledge than they could find time to gather, or build barns or cribs to hold. Once a year, for the sake of the Calendar and the Zodiacal Signs, they would read and tolerate a little "book farming" from their old and respected friend SOLOMON THRIFTY, whose Almanac abounded with hints and information which some of them, to our knowledge, profitted by without intending or knowing it. But as for buying a book on farming now and then, or subscribing for an agricultural periodical, it was a thing of the rarest occurrence. Our old friend John P. Foote, and after him Dr. D. C. Wallace, the former with the "Western Tiller," and the latter with the "Farmer and Gardener," labored indefatigably for many years, first to prepare for our farmers matter that would be interesting to them, and useful in their vocation, and next to induce them to take and read it; but after spending a great deal of time and no small amount of money, they severally abandoned their efforts, as hopeless in the then state of popular sentiment among the agricultural population of the West.

But a better state of things obtains now — owing in good part, we doubt not, to those early efforts of Nathan Guilford, ("Solomon Thrifty,") John P. Foote, D. C. Wallace, and others who followed them in the good work in which they were engaged; but also to the settlement among us of Pennsylvania, New England, and foreign agriculturists, who brought their improvements, their superior knowledge, and their books and periodicals, with them. Continual emigration also making labor more plenty, and the opening of markets enhancing prices, our farmers have been able to put in and gather larger crops, and found the avails of their exertions sufficient to enable them to put up buildings large enough to hold and protect all they could grow. And in addition to all this, they have at last found out that *their soils*

will exhaust, except on bottom tracts subject to annual inundation, *and require replenishing*.

These things, and the desire for increased production created by good prices, have finally turned the attention of our farmers to scientific treatises on agriculture and horticulture, and the more popular but equally useful information imparted by monthly and weekly periodicals devoted to this great interest. Ohio now has her agricultural paper, Kentucky hers, and Indiana hers; and in all the other States of the West and South-west, portions of the city and country press are set a part for the publication of select matter of value to the farmers; besides which, large numbers of the agricultural and horticultural periodicals of the older and more experimental farming communities of the Eastern States, are subscribed for and read over all this region.

Here is a great step, in the progress of agriculture; and it is one which will not be lost, or retraced. The popular mind was prepared for it slowly, and with much labor, but having seen its advantages, will not be apt to relinquish them. The next step, we trust, will be into *Agricultural Schools*—and we heartily commend to the attention of our country friends, who have sons to educate, the advertisement with a reference to which we commenced this article. The competency of the advertiser, is certified to us by one who has known him long.—*Cin. Gazette.*

SEED WHEAT SHOULD BE PICKLED.

The land being plowed, should be *sown* as quickly as possible; for which purpose the seed wheat should be measured up in the sacks, or ready to be measured up in the corn barn or granary, and the means of pickling it also ready when wanted. Wheat should be sown thick in spring, because there is no time for the plant to *stool* or *tiller*, that is, to throw out young shoots from the roots, as in the case of autumnal-sown wheat. About three bushels per imperial aker will suffice for seed.

Seed-wheat should be *pickled*, that is, subjected to a preparation in a certain kind of liquor, before it is sown, in order to insure it against the attack of a certain disease in the ensuing summer called *smut*, which renders the crop comparatively worthless. Some farmers affect to laugh at this precaution, as originating in a nonsensical faith in an imaginary specific; but the existence of smut and its baneful effects upon the wheat crop are no imaginary inventions, and when experience has proved, in numberless instances, that the application of a steep has the effect of warding off the evils of smut, the little trouble which pickling imposes may surely be undertaken, rather than the whole crop be put in jeopardy. Why pickling *now* should have the effect of preventing the smut at a *future* period is a different question; and it is perhaps because this question has not heretofore been satisfactorily answered, that pickling is thought lightly of by some farmers, rather than because any valid objection can be urged against its practice. Indeed there cannot, for the palpable fact stands obvious to conviction, that one field sown with pickled wheat, and managed in the usual way, will escape the smut, while an adjoining one, managed in exactly a similar manner, but sown with plain wheat, will be almost destroyed with the disease. I have seen this identical case tried by two neighboring farmers, the Messrs. Fenton, late tenants of Nevay and Eassie, in Forfarshire. It is true that, on some farms, wheat sown in a plain state escapes the disease, as I have heard Mr. Oliver Lochend, near Edinburgh, state is the case with his farm; and it is also true that pickling does not *entirely* prevent the recurrence of the disease on other farms; but such cases are exceptions to the rule, which is, if wheat is not pickled it *may* be smutted; at least no one can aver before hand that it *shall not* be so; and while uncertainty exists in the recurrence of a serious disease, the *safer* practice is to bestow the trouble of pickling, the expense being very trifling, rather than incur the risk of disease. It is now a well-ascertained fact that inoculation will not insure immunity from small-pox, yet it will certainly modify the attack when it occurs, and so it is with the case of pickling wheat; and as long as means are used to ward off small-pox, so long also, from analogy, ought wheat to be pickled.

Wheat is pickled in this way. For some days, say two or three weeks, let one of the tubs referred to [in another part of the book] be placed to receive a quantity of chamber-lye, and when ammonia is felt to be disengaging itself freely from the lye, it is ready for use. It is better that the effluvium be so strong as to smart the eyes, and water added to dilute the liquor, than that the lye be used fresh. This tub should be removed to the straw-barn, as also the wheat to be pickled, and part of the floor swept *clean*, to be ready for the reception of the wheat. Let two baskets be provided capable of holding easily about half a bushel of wheat each, having handles raised upright on their rims. Pour the wheat into the baskets from the sacks, and dip each basketful of wheat into the tub of lye as far down as completely to cover the wheat, the upright handles of the baskets preventing the hands of the operator being immersed in the lye. After remaining in the liquor for two or three seconds, lift the basket up to drip the surplus lye again into the tub, and then place it upon two sticks over an empty tub, to drip still more till another basketful is ready to be dripped. Then empty the dripped basket of its wheat on the floor, and as every basketful is emptied, let a person spread by riddling through a barn wheat-riddle, a little slacked caustic lime upon the wheat. Thus basketful after basketful of the wheat is pickled until it is all emptied on the floor, when the pickled and limed heap is turned over and over again till the whole mass appears uniform. The mixing by turning is most surely managed in this way. Let two men be each provided with a barn shovel, and let one stand on each side of the heap, one with his shovel in the right and the other with his in the left hand; let both make their shovels meet in their edges upon the floor, under one end of the heap of wheat, and each, on lifting his shovelful, turn it over behind him, and thus proceed, shovelful after shovelful, to the other end of the heap. Let them return in a similar manner in the opposite direction, and so on till the heap of wheat is completely mixed with the lime and lye. The pickled wheat is then sacked up and carried to the field in carts. Other substances besides chamber-lye are used for pickling wheat, such as brine of salt, sufficiently strong to float an egg; solution of blue vitriol — all good enough, I dare say, but when so simple and efficient and easily obtained an article as lye can be had, it appears to me unnecessary to employ anything else. It is a powerful ingredient, destroying vegetable life in the course of a few hours, and it is perhaps to this property that is to be ascribed its efficacy as a protection against the attack of that vegetable enemy of the wheat crop—the smut. The wheat pickled with it should therefore be used immediately after the process; and as danger may be apprehended to pickled wheat being kept over night, the quantity pickled should be sown at once, and no more should be pickled at one time than can immediately be sown. The use of quicklime seems to be to dry the lye quickly, so that the grains may be easily separated from one another in the act of sowing; but there may some chemical change arise between them in the circumstances, which may be serviceable to the purposes for which both are employed. Can it be that the lime fixes the ammonia of the lye, and preserves it for use until wanted by the plant or seed?—*From Stephens's Book of the Farm.*

CHEESE MAKING.

The quality and flavor of cheese vary according to the methods employed in its manufacture, and the richness of the milk of which it is made. A very slight difference in the materials; the cleanliness of the utensils; the temperature of the milk when set; the mode and time of collecting the curd before pressing; the salting of the curd; the addition of herbs or coloring matter; the degree of pressure; the frequent turning of the cheese while on the press; the coating or rubbing of its surface; the temperature and airiness of the place of drying; and the length of time allowed for maturation, all tend to alter its taste and odor, in some or other particular, and that in a way perceptible to the refined palate. The nature of the pasture, or the food on which the cows are fed, as well as their particular breed, no doubt also tend in some degree to promote the same diversity of flavor and quality; but these influences, if they exist, are comparatively slight and subordinate, as the quantity and flavor of the cheese made from the same herd often do not vary in any important particular, whether made in winter or sum-

mer, notwithstanding the food may differ from the luxuriance of vegetation at one period, and its scarcity or abundance of flowering plants at another. So long as the cows receive sufficient food of good quality, and are allowed healthful air and exercise, with proper cleanliness, it is the opinion of good judges, that the precise description of food is of little consequence, as far as the quality or flavor of the cheese is concerned; yet the richness of the milk, or the quantity of the cream, is greatly augmented when the cows are fed on Sweedish turneps (ruta-baga,) or are depastured on white clover and other sweet grasses grown on a dry soil.

The chief conditions necessary for the preparation of the superior kinds of cheese, are *a proper regard to the temperature of the milk when set; the careful and gradual removal of the whey; and a comparatively low temperature during the maturation or process of ripening.* If the temperature of the milk much exceed 80° to 85° F., say ten or twelve degrees below blood heat, both the quality and quantity of the cheese are deteriorated; if below 80°, the curd is so long in collecting, that the risk is incurred of its becoming sour, and the cheese when made has a tendency to mould. If the curd, when formed, is not immediately separated from the whey, the production of lactic acid ensues, the fluid turns sour, and the cheese itself becomes rancid and passes into a state of decomposition. If the place appropriated for ripening or storing the cheese be exposed to sudden changes of temperature, as an attic, or upper room in a house, the cheeses, if they are rich, are apt to crack, or run, and from too rapid drying, they are deprived, in a measure, of that pungent taste so much admired by all lovers of good cheese. For when cheese-curd is kept in a cool, airy place, as a lower room on the northerly side of a house, or a slightly damp airry cellar, of a constant temperature of 40° to 50° F., a series of transformations takes place, in consequence of which it assumes entirely new properties; it gradually becomes semi-transparent, and more or less soft throughout the whole mass, exhibiting a feebly acid re-action, and developing the odor and flavor characteristic in cheese, which are principally owing to the decomposition of the butter, and the liberation of capric and caproic acids contained in the curd.

The other points important to be observed in making good cheese, are as follows: —

1. *The Age and Proper quantity of Rennet.* — For reasons stated on page 144 of the present volume, the age of the rennet should not be less than eight or ten months, and the quantity used should be just sufficient to bring the curd to a fit state for breaking, which will ordinarily require about an hour and a quarter, when the color of the whey is of a pale green, and separates freely from the curd on a slight pressure. The quantity of rennet required will depend on its strength. The stronger it is, the quicker the coagulation, the temperature of the milk being the same. In general, a piece of dried rennet of the size of a half dollar, will be enough for twenty gallons of milk; but, should this prove insufficient, a little more may be added. If too much be put in, an unpleasant flavor or bitterness will be imparted to the cheese.

2. *Collecting and Preparing the Curd for the Press.*—One of the most approved modes of collecting the curd, is, to gather it with the hands very gently towards the sides of the tub, letting the whey run through the fingers until it becomes cleared, and lading it from the hollow in the centre, as fast as it appears. By this means; most of the oily particles will be preserved, which would be carried off in the whey if other methods were employed. The curd thus partially separated from the whey may next be worked slightly and slowly, at first, with a cheese-knife, cutting it at right angles quite down to the bottom of the tub into squares about an inch apart. When it has stood five or ten minutes to allow the whey to sink a little, and come out as clear as possible, the latter may be dipped out with a bowl, and strained through a cloth or fine hair sieve, in order to save the particles of curd, which may have escaped. The curd may now be cut a second time, with the strokes of the knife at a considerable distance from each other, at first, and gradually quickened and brought nearer and nearer to each other until the whole mass is reduced to one degree of fineness. This operation may occupy from fifteen minutes to half an hour.

The curd, being now sufficiently settled, can be placed over the whey-leads, or tub, in a basket or sieve, with a cloth over the bottom, in order to drain. It may then be put into the hoop, cylinder, or vat, and pressed down with the hand, then covered with the cheese-cloth and subjected to a slight pressure for half an hour, when it may be taken out of the press, cut into slices, and put into a newly invented mill, over the tub, which will tear it into very small crumbs not much larger than a pin's head. This mill is a great improvement for those who have large dairies, not only as it saves the dairy-maid the most laborious part of the process, that of rubbing and squeezing the curd into crumbs with her hands, but as it allows the oily particles to remain in the cheese, which her hands would squeeze out. The hoop or vat, may now be filled with curd as compactly as can be done with the hand, being rounded up in the middle, just sufficient that the whole can be pressed in. The cheese-cloth may then be spread over the vat and moistened with a little hot water, which tends to harden the outside of the cheese and prevent it from cracking. The curd may now be turned out of the vat into the cloth, and the vat dipped into whey to wash away any crumbs that may cling to it. The inverted cloth containing the curd, can then be squeezed into the vat, folded over, tucked in, and the whole put into the press for two hours, with a gradual though slight increase of pressure. Then, let the cheese be taken out, turned on a dry cloth, replaced in the vat, and subjected to an increased pressure, but not heavy, all of which operations should be repeated three or four times in the course of the day, when it will be ready for salting.

3. *Salting, Pressing, and Drying the Cheese.*—The salting of cheese should never be begun till the skin or rind is completely closed; for if there be any cracks in its surface, at the time of salting, they never will afterwards close; and if the curd be salted, when ground down before being put into the vat, the salt has the effect of giving a skin to each of the particles it comes in contact with, which will prevent them from intimately uniting, although the curd may be pressed together and form good cheese, yet it never will become a smooth, close, solid mass, like that which is salted after it is made, but is of a loose texture, crumbling when cut, with a brittle rind, which, when examined, appears as if formed of many irregular portions, like mosaic work.

The salting may be performed by rubbing with the hand both the sides and edge of the cheese with finely powdered, St. Ubes, Cadiz, Liverpool, or Turk's Island, salt. After this, the cheese may be put back into the vat and subjected to gradual and increased pressure, repeating the turning three or four times in the course of the day. The operation of salting should be performed at intervals of twenty-four hours each, three or four times, according to the size of the cheese, care being observed to turn the cheese three or four times a day and increasing the pressure at every change. After the second salting, the cheese should be returned to the vat without the cloth, in order that the thread-marks may be effaced, and the cheese may acquire a smooth surface and a "keenness of edge." The quantity of salt to be used may vary from two to two and a half ounces to one pound of curd.

The next step to be taken, is, to wash the outside of the cheese in warm whey, wipe it dry, and put it on a shelf in the dairy, secure from flies, where it may remain a day or two, turning it over once in twelve hours. It may then be taken to the cheese room, wiped and turned every day until it become sufficiently dry, which will ordinarily require from four to six weeks, when it will be ready for cleaning. This may be done by scraping off all scurf from the sides and edge with a common knife, and then rubbing all over it, with a woollen cloth, a thin coat of whey butter, linseed oil, or a paint made of Indian red or Spanish brown, mixed with beer. After this, the cheese should be turned over at least twice a week, until the paint or coating becomes perfectly dry. It may then remain in the cheese-room, which, it must be recollected, should always be cool, of a uniform temperature, free from much light and flies, with a moderate current of air passing through it, until required for use.—*American Agriculturist.*

DISEASES OF POULTRY.

Very little attention is paid to this subject by the farmers of this country, principally because the loss of one or two chickens is too small to draw their attention to it. And another reason is, the small number of complaints to which our domestic fowls are subject. After they arrive at maturity, they are healthy creatures. The most of them that are lost from disease die when they are young; and as this is the season at which most hens have brought out, or are bringing out their flocks, we intend to say something about them.

I. The disease by which most young fowls are lost is that well known as the *Gapes* or *Pip*. Fowls of all sorts and ages are subject to it, but particularly young fowls, and it is more common in the hot months of July and August than at any other time of the year. The usual symptom of the pip is a scale of a white, horny substance which forms upon the tip of the tongue; the chicken holds open its bill as if panting for breath; the head is ruffled, and the whole appearance of the fowl is feverish and disordered. After awhile it does not eat and pines away by itself.

There are different opinions as to the origin of the pip. It is sometimes attributed to "a small visicle which forms on the side of the tongue, the contents of which being absorbed lead to the inflammation and thickening of the skin." By others, drinking dirty water, or an inability to procure a sufficient quantity of water of any sort, is considered as the cause. When the disease has not gone far it can be easily relieved by tearing off the scale (which does not adhere very closely) with the finger and thumb, and by filling the mouth and pushing down the throat a lump of fresh butter well mixed with Scotch snuff. "This," says Mr. Boswell in his Treatise on Poultry, "is a remedy which we conscietiously and confidently recommend, and we beg leave to repeat, that we have never known it to fail, except from our own negligence in the delay of its application."

In our own mind we have no doubt but that the gapes are caused in all cases by a worm which infests the windpipe of the fowl. On dissecting chickens that have died of this disease we find the throat filled with small red worms about the size of a fine cambric needle. At first sight, they may be mistaken for red veins slightly swollen. These grow larger until the windpipe is filled with them; and after trying, in vain, to get rid of them by sneezing, and scratching the roots of the bill, the fowl dies from suffocation and inability to swallow.

The origin of these worms is not very certain. We have seen it suggested that they are produced by swallowing the eggs of hens' lice, which young chickens very probably do, while nestling under the hen. It is observed that it very seldom affects fowls in a new hen house, or in those that are kept perfectly clean by being frequently whitewashed, inside and out, with a plenty of salt mixed with the whitewash. Sulphur and tobacco about the nest will prevent it.

Now to cure the gapes, it is only necessary to kill, or remove these worms. There are several things which will quickly destroy them. Tobacco smoke is one. Fill the mouth with smoke from a pipe or cigar, hold open the chicken's bill and blow it down the throat. It will render the fowl insensible for a few moments, but it will quickly recover, and one or two (at most) such applications is said always to effect the expulsion of the worm. A small quantity of snuff mixed in a tea-spoonful of water, and given three times a day is another similar remedy. A tea-spoonful of strong solution of asafœtida is said to dislodge them effectually. If a feather be dipped in spirits of turpentine and passed down the throat, the worms will die almost instantaneously from the touch, and the chicken will recover. But a better remedy than any of these, as we believe, is to dislodge the worm by mechanical means, which may be done without inflicting the slightest injury upon the fowl. Take a hen's feather, and take off the feather from the stem, except about an inch and a half from the tip. Wet this a little, and strip it back a little, so that the feathers remaining on the stem will stand back, like the bark of an arrow. Then let some one hold the diseased fowl between his knees, so as to secure the wings and legs, and with his fingers hold open the mouth, and keep the neck drawn out in a straight line. Place the feather as near the orifice of the throat as possible, and when the chicken opens it to breathe, pass it down. After it is down, turn it round several times in the windpipe, and draw it out. Many worms will be removed in this way, and others will be loosened, so that they will be sneezed up. Do this twice a day, and if the fowl gapes after that day, it is because you have not got them all, and the operation should be performed again. By these means, they may be very surely removed, and after the first operation, chickens which had not been able to swallow, will eat freely.

II. All young poultry are much subject to disease from exposure to cold and wet. Full grown poultry are able to bear the changes of the atmosphere, but when young, no animal whatever seems so much exposed to injury from them. It produces the disease from which they probably suffer more than any other, the *Roup* or *Catarrh*. This seems to be at first a disease of the membranes of the head, and manifests itself in swollen eyes and running at the nostrils. These, and other similar symptoms increase unless something be done, breathing becomes difficult, and a rattling noise may be heard in the throat. The discharge from the nostrils becomes very considerable, and even makes its way from the mouth. It becomes very offensive, resembling the glanders in horses, and from being at first thin and limpid, it becomes thick and purulent. The fowl loses its appetite, and sits moping by itself, seemingly in great pain.

When a fowl is thus diseased he should be at once separated from the rest. Even supposing that the disease not is infectious, and it is not improbable that it is infectious, cleanliness requires this measure. The first requisite for a cure is that the fowl be kept in a dry and warm place with plenty of clean water to drink. If the weather be cool it should be kept in a room with a fire. The nostrils and mouth should be frequently washed clean with soap-suds, and the eyes bathed in milk and water. Give a pepper-corn in a pill of dough for three several days, and then bathe the diseased parts in camphorated spirits. "Combined with every remedy," says Mr. Bement, "cleanliness is indispensible, as the first, the last, and the best, without which all others are vain, and worse than vain, as they may be pernicious by feeding instead of starving the disease."

III. During all seasons of the year, fowls are troubled with lice, unless they are kept in good order, but particularly in the warm season. Give them access to a plenty of fine sand, ashes and lime in which they may roll themselves, and they will not receive much injury from them. If a fowl becomes very full of them, it is necessary to use grease in some way to get rid of them. This is at last the surest destroyer of lice on fowls, and indeed on all animals. *Lice*, like all other insects, breathe through small air-holes in their sides. Oil on the feather or hair through which they crawl, quickly fills up the holes, and they suffocate. Push back the feathers and pour a little oil on the back, between the legs, and under the wings of the fowl, and they will soon be gone. Another way is to put a lump of lard under their wings, and after it is perfectly melted, it will be diffused over almost the whole body.—*Southern Planter.*

BRICK MAKING.

Of all the arts and handicrafts of man, none has manifested less improvement than the art of making bricks. To convert clay into mud, form it into shape, expose it in the sun, and then bake the bricks in the kiln, seems to have been the mode all the world over, since the days of the patriarchs. True, we have seen several labor-saving brick machines, but they operate upon the clay in its wet state, either tempering it to proper consistency, or moulding it into bricks. Not much, however, is gained by this, as all the more laborious parts of the process remain the same. Still the manipulations to and from the drying yards; packing under sheds and thence to the kiln; still the same exposure and risk of the weather and dependance upon the same.

It is to Mr. Nathan Sawyer, of this city, that we are indebted, as the originator of the plan of making bricks by pressure from dry clay, to the perfecting of which he has devoted many years of his life and a large expenditure of money. His first attempt was in 1833, his first patent in 1835, and the first machine was built in Washington, moved by horse-power. Rude and imperfect as it was, it yet de-

monstrated the principle and established the fact that bricks might be made *from dry clay by pressure*. This led to the construction of the present machine in Washington, driven by steam, which has been in successful operation for eight years, and supplied many millions of bricks to the different public buildings, the navy yard and elsewhere.

The steam brick press in this city, belonging to Mr. F. H. Smith, is the fourth of Mr. Sawyer's invention, each being an improvement upon its predecessor. His first attempt began with a pressure of four tons—this last gives a hundred and twenty tons to each brick, turning out about 2,000 bricks per hour.

Mr. Sawyer's fertile genius has been again at work, and the result has far eclipsed all former efforts. For simplicity, cheapness and efficiency, it is all that can be desired. The pressure is given upon an entire new principle, dispensing with cams, leavers, toggle joints, and the ordinary appliances for such purposes. It employs only *the upper piston*, and yet presents a brick perfect in shape and pressed infinitely harder than by any former machine. The motion is rotary; occupies a space of only six feet in diameter; is comprised of but few pieces, not the tenth in number of those contained in Mr. Smith's; has no complicated small contrivances liable to disorder, and when worked at the slowest motion, makes 3,000 bricks in an hour! To crown all, the cost of the machine is about one-fourth of that just mentioned and requires but half the power!

The prejudice that has existed here against the steam-pressed bricks, is now nearly if not quite removed. The late report of Messrs. Long and Latrobe; the recent experiments by the Government officers in Washington, and subsequently also at the navy yard, Forfolk, establish the fact that they are strong and durable. All new inventions and innovations upon old habits and long established principles encounter strong opposition, and have a host of prejudices to overcome—witness cut nails, chain cables, dressed flooring, and hundreds of others that may be mentioned. But steam-power will ever triumph, and the day is not far distant when in all our large cities, bricks will be made only by machinery.—*Balt. Pat.*

EXPERIMENTS AMONG FARMERS.

Of all the means within the reach of the husbandman for making new discoveries and eliciting new truths, none seem so generally available or so certain of success, as well conducted experiments. These will furnish the key to unlock the chest of gold, the source from which have sprung and will spring the most important improvements in science and art, and it is to them we must look for those mighty advantages and blessings which we anticipate from future discoveries.

Experiments, I know, have often been made the subject of ridicule; but the farmer should never be deterred from trying them, by the jeers and ill-boding predictions of those who interest themselves more about the affairs of others than their own. Had Fulton been influenced by the ill-augured omens of the multitude, he would never have tried the experiment of propelling a boat by steam. Neither ought the enterprising farmer to be discouraged by failures; for "true glory consists not in never falling, but in rising every time we fall." Let him pursue a straight-forward, persevering course of experimenting, and in the end he will find that the gain will far exceed the loss. Yet, proper care and vigilance should be observed when walking in untrod paths. No matter how plausible a theory may appear, it should not be relied on with confidence, until it has been proved by experiment to be sound and trust-worthy. Hear-say evidence should always be regarded with distrust until our own experience has tested its validity, and caution must sometimes be observed in putting it to this test. It will not do to follow the example of the farmer, who, having heard that a hog could be made fat by feeding it one ear of corn and a pailful of water per day, starved a dozen to death by trying the experiment.

The better way is to try experiments on a small scale, as the truth can be as well ascertained in this way, as by running the hazard of great loss, with the uncertain prospect of great gain. The utmost care should be observed in whatever innovation may be tried, and the appearance of success should not always be regarded as a certain evidence thereof. We ought also to be cautious about recommending to others, particularly through a public journal, a system which has been found good under certain circumstances, but which might not prove so under all. Such unjudicious advice, given undoubtedly with good motives, has so often resulted in failure and disappointment, as to keep alive the unreasonable prejudice against *book-farming*. If, for example, one man finds by experiment that lime, applied to his corn, has increased the product one-half, he is not warranted in saying it will *always* have so good an effect. In this case, the soil must be taken into consideration. Had this individual gone further and furnished a correct analysis of his soil, he might then very properly have given the result of his experiment as evidence of the benefit that might be expected from the use of lime on soil similar to his own. The way to make experiments result to our own good and to that of others, is to conduct them on a scale adapted to our resources, and to bring to their aid the important auxiliaries of an enlightened judgment and sound understanding.

As suitable subjects for experiment and investigation, I would suggest, 1st, That trials of various kinds of manures organic and inorganic; that the soil on which they are applied should be analysed, its situation and exposure taken into consideration, and the various advantages of the different manures carefully noted down. 2d, That every farmer should keep a correct account of all the expenses attending the cultivation of each crop, and every particular of his management. He will thus ascertain what kinds of produce are best adapted to his soil, which most profitable, and what mode of treatment most efficacious. 3d, Experiments in feeding and fattening different kinds of stock in order to ascertain the cheapest and best system. Others might be mentioned, but cases will occur almost daily, where the farmer will be at a loss which of two or three methods to adopt, and in such instances I would say, try them both or all, when practicable; watch the result of each, ascertain which is best, and then you will have a guide to direct your after management, in which you can place more confidence than in any *hearsay* testimony.

Much benefit would undoubtedly be derived from a systematic course of experiments. That a gradual progress has long been, and still is going forward in American agriculture, is an undeniable fact; and it is equally true that there still remains much room for improvement. No farmer should feel satisfied while the system remains imperfect, and each one ought to consider it his interest as well as his duty, to contribute to the advancement and dignity of his calling. Every individual who cultivates an aker or more of ground, has it in his power to do something towards the attainment of perfection in agriculture. "Where there is a will there is a way," is a trite and true saying, and should be considered by those who make no effort to improve, and who attribute their ill success to "bad luck" instead of bad management. To those who are really anxious to acquire useful knowledge, the means of obtaining it are seldom wanting, and that knowledge which is gained by our own experience is much more valuable and lasting than that which comes second-hand and has cost us little exertion.

GREENPORT, N. Y., June '47. J. MCKINSTRY.

ROADS, COTTAGES FLOWERS, &c., IN ENGLAND.

The perfection of the roads in England, has been the theme of every traveller through that richly cultivated country. The travelling by coach on the great thoroughfares through the kingdom, has been greatly diminished since railroads have been constructed. In many parts of the kingdom, however, the coach is still in use, and some idea may be formed of the ease and comfort of that mode of travelling which was formerly the pride and boast of every Englishman. Over their level and smooth roads, it is certainly one of the most delightful methods of travelling in *fine weather*. A seat upon the box with the coachman, who is usually intelligent and free to converse with a traveller, and well acquainted with the history of persons and places of interest on his route, renders this a very pleasant method of seeing the country, and learning the incidents which interest a stranger. The coachman has nothing to do with

the horses until the time arrives for starting. He examines the team, sees that all is right, mounts his box, and is off at the rate of ten miles an hour, which I found the usual speed on all their roads. When he arrives at the usual place for changing horses, his lines are thrown down, and he enters the public house, where he is the great man among the hangers-on, and as he receives notice that all is ready, mounts his box again, and is off.

The roads usually wind round through the farms, bounded on each side, generally, by neatly trimmed hedges, with trees occasionally interspersed, presenting every few rods new views and interesting scenery, that are truly delightful. The roads are made with the greatest care, generally McAdamized, and entirely smooth. They are much narrower than with us, usually through the country, only wide enough for carriages to pass. The custom in England is, for each team to turn to the left, instead of the right, as with us. Its advantages are apparent, as the driver setting on the right, has in view the vehicle which is approaching, and can more readily ascertain how far he can drive with safety. In making their roads great care is taken to avoid hills, they judging, I suppose, that it is not ordinarily much further to go *round a hill* than to go over it. Foot-paths are usually made with care on one or both sides of the road. No danger is to be apprehended from swine, or other animals, as they are not permitted the enjoyment of that license, which seems to be their birthright in our free country. I have never witnessed them running at large in city or country, not even in sweet Ireland.

The cottages which you pass, are generally neat in their outward appearance, very frequently covered with climbing vines, and flowers usually in abundance in the small yard in front, and often in pots at the windows. The cottages are low, the roof frequently not as high as the top of the coach, and a full view of the interior is enjoyed, as they are situated close to the road. Every few miles villages are passed through,—but the term village, as descriptive of our American villages, gives but a faint impression of an English one. Instead of spacious streets, with painted houses of two or more stories, we find, as the road winds around through the narrow streets, small cottages and shops crowded together close to the street, frequently with thatched roofs, with brick or stone floors. A house or two, occupied perhaps by the rector or physician, are somewhat more aristocratic in their appearance. Many of the buildings are whitewashed, and covered with vines, and present, upon the whole, an interesting appearance, but little of the comfort of one of our villages. They appear as ancient, many of them, as their country, and I presume little change has been made in them for centuries.

England truly is the land of flowers. They are to be found everywhere. The markets are filled with them. You meet them in the streets carried about by females and children for sale, and everybody, from the poorest up to her majesty, have a boquet of flowers in the button-hole or about the person. In the omnibus coach, railroad cars, on the steamer, on change, in the store — in fact, everywhere, they are to be met with. 'Tis delightful thus to witness their taste for flowers. It adds much to the pleasure of every one, and when it can be obtained at so cheap a rate, it is certainly desirable to cultivate a taste for them.

The loads which a team can draw over their roads are nearly twice as heavy as could be drawn over ours with the same power. It will require time and care to bring our roads into such a state as to resemble roads here. It would be well, I think, to begin to approximate to the like condition. Had the labor which has been so unskilfully expended on our roads for the last twenty years, been laid out in macadamizing them, we should, on all our principally travelled roads, have had them as good as the roads are here. It is hoped that improvement, in this respect, will not much longer be delayed.—*Cultivator.*

CURE FOR THE FOOT-ROT IN SHEEP. — Take honey 4 oz., nitrate of copper 1 oz.; strong acetic acid 2 drachms; rub down the nitrate of copper thoroughly in a wedgewood or porcelain morter, and gradually mix it with honey; then add the acetic acid so as to form a mixture of uniform consistancy, and apply it to the feet of the sheep.—*Am. Agricult.*

CULTIVATION OF HOUSE-PLANTS.

The cultivation of plants in the house has become so universal in our community, and an object of so much interest to the fairer half of creation, that I have ventured to send you a few ideas, (drawn from my own experience,) upon the manner of cultivating and preserving them, in the hope of contributing something to promote this simple and beautiful taste.

Nothing is more common than to see windows filled with drawn up and weakly plants—denuded of their foliage, and looking as if they were maintaining, with the adverse circumstances in which they are placed, a desperate struggle for existence. To remedy this evil, to put the lovers of plants in a way to procure a vigorous growth and free bloom, is the object of this communication; for if the view of a fine plant in the winter, well clothed with green and graceful foliage, and loaded with flowers, gratifies our love of the beautiful, reminding us of "verdant spring and summer redolent of sweets," so also doth the defoliated and withered plant give us only pain, reminding us of "sere and yellow" autumn, and the biting frosts of winter.

Any effort which tends to promote the love of the beautiful, to embellish the home of the humble and the poor, as well as the proud and the affluent, thereby contributing to the sum of human happiness, and adding one more link to the golden chain which binds the various classes of the great human family together, is not unworthy the lover of his kind, nor the philosopher who aims at their improvement: for this must come through the subjection of unnatural, false, and selfish tastes, supplying in their stead, the natural, the true, and beautiful. It is said of the ancient Romans that they cared not for fine furniture, but embellished their houses with flowers. The effect of this on the public mind could not but have been good; and the Romans only degenerated when luxury crept in, perverting simple and true taste, and enervating that character which we constantly refer to as the type of all that is valorous and great

Most plants have roots and stems, bark and leaves — the roots terminate in minute rootlets or spongioles, whose office is to take up the food of the plant in a liquid state. It is then carried up to the leaves, where it is spread out to the action of the light and air, to be elaborated and fitted to support and nourish the plant: it is returned from the leaves through the cellular tissue, and furnishes the woody structure, buds, leaves and flowers. Two essentials must be remembered in this connexion—the proper food for the plant must be presented to the root, and the leaves must be exposed to the action of the light and air, for thus only are the juices prepared to feed the plant. The necessary preliminaries to growth are then a proper soil, a good system of leaves, light and air. The leaves also absorb a quantity of carbonic gas from the atmosphere, which makes wood, it is thus that cuttidgs are supported until they become rooted. Leaves are the lungs of plants, which exhale the superabundant moisture which the roots take up; they do this more rapidly when exposed to a current of air than in a close atmosphere, and hence to give them air promotes the formation of firm wood.

The presence of life in the plant controls the action of soil, and the salts it contains, &c., upon the plant and of the plant upon them, and when this principle is weak, the spongioles use their discriminating power, and take in with equal facility that which is useful and that which is pernicious. The importance of this fact will be perceived, since only a healthy plant can bear the stimulant soil needful to a perfect and abundant bloom.

All plants must have a season of rest. This, in a state of nature, they receive through the influence of cold weather, or a dry season. We must imitate this process if we wish to have strong plants, by withholding supplies of water and heat; when we shall find the plant, after sufficient rest, pushing strong buds again. This is the signal for renewed cultivation. At this time cut out most of the old wood, give the plant a gentle watering, and bring it into the warm room: it will not disappoint you of a free bloom. If you do not approve this course, or it is not convenient, take cuttings from the old plant, when the bloom is over, and throw the plant away. The plants from cuttings may be kept in a state of constant growth till they have bloomed, when

you proceed as before. This is however, incompatible with a desire for large plants.

ENGRAFTING THE CHERRY.

BY J. P. KIRTLAND.

The process of engrafting the cherry is usually far more uncertain than other kinds of fruit trees. Strict attention to the following rules will insure a tolerable share of success, and we prefer it to budding.

1st. *The grafts* must be cut before the least circulation has taken place in the sap of the tree. We usually take them off early in February, and bury them in sand, in a cellar not too moist. On the first of March of the present season we inserted a number that we cut immediately from the tree and they lived without an exception. Mr. Sturdevant, an experienced cultivator, of Tallmadge, informs us that he preferred the latter practice. To succeed in this manner they must be inserted as early as the season will allow.

2d. *The time* for performing the operation varies in different seasons. It is at the moment when the first movement of the sap commences, and is immediately previous to the first swelling of the buds of the stock. This of course will vary in different seasons and in different localities. In 1844 we inserted 150 cherry grafts on the third day of March, of which only three failed, and many of these grafts had been carried fifteen hundred miles in the U. S. mail. The succeeding evening a most violent snow storm succeeded and continued with severe cold for two days, without injuring the grafts. During the first two weeks of March of the present year we inserted some four or five hundred grafts. They apparently took as well as those inserted the previous year, but one-fourth were destroyed either by the frosts of April and May or by the severe drought that prevailed during the spring and summer.

3d. *The stocks* must be vigorous and healthy seedlings Suckers or sprouts will not answer. For the bigarreau and heart varieties, the black mazzard stock is required. The morello will answer for the duke cherry, though the mazzard stock is preferable.

4th. *The materials* required for the operation are few. A knife with a blade two inches long, one-third of an inch in width, with the back thin, and edge as keen as a razor; and strips of grafting-wax, prepared by melting together three parts of rosin, three parts of bees-wax and one of tallow, and then spreading, with a paint brush, the composition upon *new* cotton sheeting—*old* is not sufficiently strong. When the coat of wax is cold the cloth should be cut into strips ten inches long and three quarters of an inch in width.

5th. *The mode.* Either saddle or whip grafting will generally succeed. We prefer the former for certainty of success—the latter is more expeditious. Descriptions of both processes are contained in most of the books on horticulture, and are understood so universally as to need no repetition.

When the scion has been well adapted to the stock, by either plan, it must be well secured in its place by winding it firmly with a strip of grafting plaster, so as to cover perfectly all the parts of the stock and graft involved in the operation. If the weather should be very cold, the wax may be softened by breathing upon it or by laying the strips on heated bricks.

6th. In the course of a few weeks, as soon as the grafts have taken a growth of one inch, the strip of grafting-wax should be cut carefully through so as to prevent its ligating, but must be permitted to remain in its position to strengthen the union between the graft and the stock.

Lindley, in his Principles of Horticulture, observes that he "has never lost a cherry by engrafting in this mode." My own success has been far greater than by budding.

We find the following in one of our exchanges. For out-door rough painting it may be worthy of trial:—*P. Farmer.*

INCOMBUSTIBLE WASH.—Slake some stone lime in a large tub or barrel, with boiling water, cover the same up to keep in all the steam. When thus slaked, pass six quarts of it through a fine sieve. It will then be in a state of fine flour. Now, in six quarts of this lime add a quart of salt, and one gallon of water; then boil the mixture, and skim it clean To every five gallons of this mixture add one pound of alum half a pound of copperas, by slow degrees, three quarters of a pound of potash, and four quarts of fine sand, or hard wood ashes, sifted. This mixture will now admit of any coloring matter you please, and may be applied with a brush. It looks better than paint, and is as durable as slate. It will stop small leaks in the roof, prevent the moss from growing over and rotting the wood, and render it incombustible from sparks falling upon it. When laid upon brick work, it renders the brick impervious to rain or wet.

SUCCESSFUL STEEP FOR SEEDS.

Much has been said and written on the subject of soaking seeds in different preparations, for the purpose of promoting their rapid vegetation and growth. As far as I have heard or read these experiments have proved that most of these solutions or preparations are nearly or quite worthless. I will, however, state a few facts in relation to one solution that I have tried for the last three seasons.

In the winter of 1845, I found in the Philadelphia Saturday Courier, I think, the following recipe: "Soak garden seeds four hours in a solution of chloride of lime in the proportion of ¼ oz. chloride of lime to one gallon of water." The writer observes that seeds which were soaked thus, came up some days sooner than those which were not soaked, and that the plants kept the lead through the season.

The experiment being easily tried, I made up my mind to give it a fair trial, and see what the result would be. On the 10th of May, 1845, having my ground ready, beds made, hills all prepared, so that as little time as possible should be consumed in planting, I put cucumber, musk melon, beet, summer savory and radish seeds, and corn, beans and peas into the solution, let them soak four hours, and planted immediately. Twenty-four hours after planting, I dug up some of the corn and peas, and found that their roots were from one to one and a half inch in length. In forty-eight hours the roots were three to four inches in length. The precise day that they broke ground I now forget.

My cucumbers and melons came up quick and well, and for the first time in my life, my beets were up before any weeds were started. In a garden adjoining mine, planted nine or ten deys previous to mine, beans were just breaking the ground when mine were planted, yet mine passed them in a weak, my corn came up about the same time, and my peas came up first. Now as to the *moisture* merely, seeds lying in the ground eight or ten days would imbibe as much as they would by being soaked four hours. I have not marked the exact time of my seeds vegetating since 1845. I know, however, that my seeds do not fail me as they used to do, and that my neighbors' frequently do.

This year I did not plant my garden till the 17th of May. Everything that I soaked came up quick, so that my plants were altogether ahead of the weeds, and my cucumbers and melons have kept out of the reach of the bugs, while my neighbors have planted two, three or four times. I have never seen any notice of this solution, except as above mentioned. Two or three of my neighbors have tried the experiment this year with the like good results.—*Alb. Cult.*

CHARCOAL BENEFICIAL TO PEACH TREES.—Mr. Mason Cleveland, of Hartford, Ct., makes public in the American Agriculturist an experiment made upon a peach tree by an acquaintance of his, the truth of which he says can be depended upon beyond all question—at any rate the experiment is a cheap one, and is worth trying. He had a young peach tree, the leaves of which were turning yellow, and showing other symptoms of decay. My friend, calling to mind the qualities of charcoal, removed the turf and soil, near the roots, in a circle of about two feet in diameter around the tree, and filled the place to a level with the surrounding soil, with fine pieces and dust of charcoal, which remained in the bottom of the box. The result was surprising. The tree put on fine healthy leaves instead of the yellow ones, and all other signs of sickness departed in a wonderful short space of time. The tree again commenced growing, and remained perfectly healthy until some years after, when it was destroyed by the weight of its crop of

fruit assisted by a strong wind. It is worthy note that its fruit, both in quality and size, was as much improved as the appearance of the tree itself.

BUTTER AND CHURNING.

September and October are the months for butter. The weather is now cooler and the milk will keep longer than in August. Many farmers make their cheese in July and August and in those months make no butter.

In some of the middle States it is a common practice to churn the milk soon after it comes from the cow, adding something to curdle the milk a little; but this is not the best way to make butter, for it requires too much labor to churn.

The labor of churning is much diminished by bringing the cream to a proper temperature at the commencement of the process. About 60° is the mark that should be indicated by a thermometer. Some make it a little warmer, 65°. Sixty-two degrees will answer well, and every one should have a thermometer at hand when butter is made.

If the cream is too warm the butter comes too quick and too soft, and it is quite difficult to separate the milk from it. If the cream is too cold, the labor of churning is great, and the quantity of butter is small. The cream should not be set very near a fire when it is cold. A gradual warming should take place, and in a cool day in October the cream may stand half a day in a room of the right temperature as shown by a thermometer hanging near the churn. But a surer way is to dip the glass into the cream to determine its warmth.

While the cream is in the pots waiting for churning day, it should be stirred thoroughly at least once aday, as this prevents its molding and makes the churning easier. The cream must not be rapidly warmed when it is too cold, for some of the particles will melt and injure the butter as well as increase the labor of churning.

As soon as the butter is well gathered the butter-milk should be turned off and pure water should be turned in to take its place. The churning must now be resumed for a few minutes and then the water must be turned off. This should be repeated till the water ceases to look milky. The butter may then be salted as high as one ounce to the pound, for on the second working of the butter the salt is partly lost in the milky matter that is worked out.

The labor of working over the butter to separate every particle of milk from it is arduous, as the butter is now hard and unyielding. A brake therefore, something like the brake that bakers use in working bread, should be kept in all large dairies. The cost is not great. A stone platform is best, and the leaver may be fastened at one end to a staple in the stone.

It is now agreed that butter may be worked over so much as to injure it; yet it must be worked long enough to rid it of the milk. When it is well washed in cold water if there are any liquid particles left they will not putrify as milk will, for the matter will be brine rather than salted milk.

Many object to the use of water, and think the flavor of the butter is injured by it. But we can see no good reason for the objection, and we know that water does not spoil it, for water-washed butter obtains the highest premiums as often as butter unwashed. Water does not mingle with oily matter.

Some years ago we suggested the propriety of using a brake to work butter. We now hear that they are common in some places.

We advise beginners not to be in too great haste in the commencement of churning. If the cream is agitated violently at first it foams and prevents the proper jostling of the particles together. Begin slowly and you will have the more weight of butter.—*Massachusetts Plowman.*

HOW LONG WILL AN APPLE TREE LIVE.

It is an idea with many in Maine, that apple trees in this State do not live so long as they do in the southern parts of New England—that they begin to decay at the age of forty or fifty years. We do not know whether this is correct or not. Apple trees that have been neglected, or set out on unsuitable land, will undoubtedly decay in that period of time, if not sooner; but we doubt if (all things being equal as to soil) whether the apple tree is any shorter lived in Maine than in Massachusetts. The oldest apple trees in the interior of Maine, say in Kenebeck county, are about fifty years of age, and the most of them are vigorons and healthy. It is true that many trees are decaying, or dead—some have died or are suffering from injuries; others from the improper condition of the soil; the water standing about them or collecting about their roots in consequence of an impervious subsoil — others dying or lingering from the effects of the boarer. It was a prevalent opinion during many years of the first settlement of Kennebec county, that apple trees would not grow, and this hindered people from planting as soon as they otherwse would, consequently our orchards are not so old as many of the settlements are in which they are placed. The oldest orchards in Maine are probably in York county, and we should be happy to hear from some of our friends in that section of the State on this question.

We believe that the first orchard ever set out in New England was on the Perreguin White place, in Plymouth, in 1638, and one of the trees was living a few years ago, and, of course, must be over two hundred years old.

We find an account of an old apple tree in the second volume of the American Agriculturist, in a letter from J. W. Stuart to A. B. Allen, Esq., the editor. We copy a part of it for the information of those of our readers who feel a curiosity in such matters. The tree stands on the Charter Oak place in Hartford. "This place was the seat of the Wyllys family, one of much distinction in the history of this State, and remained in their possession till about twenty years ago, when it passed by purchase into the hands of Stephen Bulkley, lately deceased. According to the uniform statement of this family, and that Mr. Bulkley, to whom it was communicated by the last proprietor of the Wyllys name, from whom he purchased it, the apple tree in question was brought from England some time before his death, which took place in 1645. This tree, therefore, is probably more than two hundred years old. Nearly two-thirds of its trunk are now gone. The remainder consists of a side or shell, not more than four inches thick in any part. The inside of the tree has, therefore, almost entirely disappeared, but the portion left and the bark on it, are still vigorous. So far as can be judged from its present appearance, the trunk was about twenty inches in diameter. From the top several young and thrifty branches shoot out, giv g a present height to the tree of about twenty-five feet. It of the variety called pearmane. It generally bears more or less, and this year (1843) bore about half a bushel. The fruit is very choice."—*Maine Farmer.*

MAKING PICKLES.

This is the season for making pickles, and we are sure many of our female readers will thank us for inserting the following extracts from Miss Beecher's Receipt Book.

PICKLES.—Do not keep pickles in common earthen-ware, as the glazing contains lead, and combines with the vinegar.

Vinegar for pickling should be sharp, but not the sharpest kind, as it injures the pickles. If you use copper, bell metal, or brass vessels for pickling, never allow the vinegar to cool in them, as it then is poisonous. Add a table spoonful of alum and a teacup of salt to each three gallons of vinegar, and tie up a bag with pepper, ginger root, and spices of all sorts, and you have vinegar prepared for any kind of common pickling.

Keep pickles only in wood or stone-ware.

Anything that has held grease will spoil pickles.

Stir pickles occasionally, and if there are soft ones, take them out and scald the vinegar, and pour it hot over the pickles. Keep enough vinegar to cover them well. If it be weak, take fresh vinegar, and pour on hot. Do not boil vinegar or spice over five minutes.

To Pickle Tomatoes.—As you gather them, throw them into cold vinegar. When you have enough, take them out and scald some spices tied in a bag, in good vinegar, and pour it hot over them.

Fine Pickled Cabbage.—Shred red and white cabbage, spread it in layers in a stone jar, with salt over each layer. Put two spoonfuls of whole black pepper, and the same quantity of allspice, cloves and cinnamon, in a bag, and scald them in two quarts of vinegar, and pour the vinegar

over the cabbage, and cover it tight. Use in two days after.

To Pickle Cauliflower, or Brocoli. — Keep them twenty-four hours in strong brine, and then take them out and heat the brine, and pour it on scalding hot, and let them stand till next day. Drain them, and throw them into spiced vinegar.

To Pickle Onions.—Peel, and boil in milk and water ten minutes, drain off the milk and water, and pour scalding spiced vinegar on to them.

To Pickle Gherkins.—Keep them in strong brine till they are yellow, then take them out and turn on hot spiced vinegar, and keep them in it in a warm place, till they turn green. Then turn off the vinegar, and add a fresh supply of hot, spiced vinegar.

Mangoes. — Take the latest growth of young musk melons, take out a small bit from one side, and empty them. Scrape the outside smooth, and soak them four days in strong salt and water. If you wish to green them, put vine leaves over and under, with bits of alum, and steam them a while. Then powder cloves, pepper, and nutmeg in equal portions, and sprinkle on the inside, and fill them with strips of horseradish, small bits of calamus; bits of cinnamon and mace, a clove or two, a very small onion, nasturtions, and then American mustard-seed to fill the crevices. Put back the piece cut out, and sew it on, and then sew the mango in cotton cloth. Lay all in a stone jar, the cut side upward.

Boil sharp vinegar a few minutes, with half a tea-cup of salt, and about a table spoonful of alum to three gallons of vinegar, and turn it on to the melons. Keep dried barberries for garnishes, and when you use them turn a little of the above vinegar of the mangoes heated boiling hot onto them, and let them swell a few hours. Sliced and salted cabbage with this vinegar poured on hot is very good.

The Potato Rot in Ohio.—There is reason to fear that a large proportion of the present potato crop in this State will be destroyed by that mysterious malady the rot. In our recent trip we passed through portions of nine different counties, extending northward from this place to the Lake, and, in every one of these, we saw evidences of the disease —though, in some cases, it was only just beginning to manifest itself, and was not yet known to exist by the owners. We also learn by letters and our exchanges, that, eastward, in Coschocton county, and, westward, in Montgomery county and in Hamilton, the rot has made its appearance is rapidly destroying the crop in some places, exciting much inquiry and apprehension among the farmers and others. Even our own "little farm" has not escaped, and where we expected to have several hundred bushels for market, it is doubtful whether we shall save enough healthy tubers for our own family use.

The first indications of the disease is the leaves turning black—not all at once as by frost, but gradually and in spots, leaving some leaves on the top of the stems, or a whole stem or hill, looking healthy for a time, but not long. The tubers in the mean time cease growing, become watery and discolored, and sood begin to decay, especially when dug.

Ohio Cultivator.

Plowing with Elephants. — It is stated that in Ceylon, elephants are employed in plowing rice fields and in prepairing new grounds for the cultivation of coffee, pepper, &c. One of these animals, well trained, it is said, will do the work of twenty oxen; consequently more labor is performed in a given time, and the period is hastened for putting in the crops. The price of an elephant in Ceylon varies from fifty to seventy-five dollars. Could not the elephants exhibited in the caravans in this country be more profitably employed in plowing our prairies of the West?

Bulbous Plants. — To check the growth of the foliage of bulbous plants is very decidedly injurious to them. After they have done flowering, it should be an object to stimulate the leaves to make strong and vigorous growth; and this should be done under the influence of strong bright light, and continued till they show symptoms of having passed their maturity; this is generally indicated by their turning yellowish, and decaying at the tips. Moisture—both at the root, and in the atmosphere — is then to be reduced gradually until they are brought to a state of rest. It is, therefore, an erroneous though a common practice to cut off the foliage of hardy bulbs as soon as their bloom is faded, or even at any subsequent time, while that foliage is in a growing state; and it is also hurtful, though sometimes necessary, to take them up and remove them to another place, unless this can be done without greatly disturbing their roots.—*London Hort. Mag.*

How to Preserve Tomatoes. — Take clean, ripe tomatoes, sufficient to cover the bottom of a large kettle, and place over a slow fire until their skins break, which must then be peeled off; cut out the hard core, and slowly boil the remainder until it becomes quite thick and of a dark brown color, stirring it well to prevent burning. Spread it upon plates about an inch in thickness, and dry in the sun for seven or eight days, afterwards placing it in a moderately warm oven until thoroughly dried. The substance thus prepared will keep for years, and is so highly flavored, that a piece two inches square, stewed in half a tea-cupful of water, will be sufficient to mix with the gravy of five pounds of beef-steak, or a ragout.

How to Make Yeast. — Mix two quarts of water with wheat flour to the consistence of thick gruel; boil it gently for half an hour, and when almost cold, stir into it half a pound of sugar, and four table-spoonfuls of good yeast. Put the whole into a large jug or earthen vessel, with a narrow top, and place it before the fire, so that it may, by a moderate heat, ferment. The fermentation will throw up a thin liquor, which pour off and throw away; keep for use the remainder, in a bottle or jug, in a cool place. The same quantity of this, as of common yeast, will suffice to bake or brew. Four table-spoonsful of this yeast will make a fresh quantity as above, and the stock may always be kept up, by fermenting the new yeast with the remainder of the former quantity.—*American Agriculturist.*

Blackberry Syrup.—The following is the recipe for making the famous blackberry syrup. No family should be without it; all who try it, says and exchange paper, will find it a sovereign remedy for bowel complaints:

"To two quarts of blackberry juice add half an ounce each of powdered nutmeg, cinnamon and alspice, and a quarter of an ounce of powdered cloves. Boil these together to get the strength of the spices, and to preserve the berry juice. While hot, add a pint of fourth proof pure French brandy, and sweeten with loaf sugar. Give a child two teaspoonfuls three times a day, and if the disorder is not checked, add to the quantity."

A Hasty Pudding.—Three pints of sbalded milk, seven spoonfuls of fine Indian meal; stir well together while hot, let it stand till cooled; add four eggs and half pound of butter, spice and sugar; bake four hours.

CONTENTS OF SEPTEMBER NUMBER.

Inoculation of Fruit Trees. ... 113
Beech Tree—Is it ever Struck by Lightning? ... 113
Sheep versus Briers. White Clover for Pastures, &c. ... 114
Easy Methods in Soap Making. Address by Gov. Wright, ... 115
Agricultural Schools, ... 120
Seed Wheat should be Pickled. Cheese Making, ... 121
Diseases of Poultry. Brick-making ... 123
Experiments among Farmers. Roads, Cottages, Flowers &c , in England, ... 124
Cure for the Foot-rot in Sheep. Cultivation of House Plants, ... 125
Engrafting on the Cherry. Incombustible Wash, Successful Steep for Seeds. Charcoal Beneficial to Peach Trees. ... 126
Butter and Churning. How long will an Apple Tree Live? Making Pickles, ... 127
The Potato Rot in Ohio. Plowing with Elephants, Bulbous Plants. How to Preserve Tomatoes. How to make Yeast. Blackberry Syrup. ... 128